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By

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THE CONSUMERS' LEAGUE OF THE CITY OF NEW YORK

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The Cost of Clean Clothes in Terms of Health

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A STUDY OF LAUNDRIES AND LAUNDRY WORKERS IN NEW YORK CITY

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FOREWORD.

Many guesses have been hazarded as to the effect of laundry work upon employees. For a long time people have considered certain factors of the work injurious. But the comparatively recent development of the industry and the pressure of the more obviously dangerous occupations have prevented students of industrial hygiene from carefully studying the laundry industry until a short time ago. Within the past few years, several very valuable state and federal investigations of conditions in this trade have been made to determine the physical demands of the industry upon the workers in it.*

In New York City, where the laundry business is larger and more important than in any other city in the country, little has been known of this aspect of the industry. The studies of the trade which have been made have placed almost exclusive emphasis on the danger to the customer through the improper handling of clothing and linen, and on the best ways to guard against infection. Processes of work have been described; unsanitary conditions, and practices dangerous to the public health have been pointed out. No close study has been made of the individual workers and of the relation of their working life to life outside the laundry.

During the fall of 1916, Dr. Louis I. Harris, then chief, Division of Industrial Hygiene and now Director of the Bureau of Preventable Diseases, Department of Health of New York City, planned a careful study of New York City power laundries and laundry workers, and detailed Dr. Anna E. Ray-Robinson, of the Division of Industrial Hygiene to make the necessary examinations. The purpose of the study was in harmony with the general purpose of this Division, namely, to ascertain whether this trade is a menace to health, whether it causes specific diseases or predisposes the employees to illness; and if so, what ways may be found to safeguard the workers and make the industry a healthful one.

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*Employment of Women in Power Laundries in Milwaukee. Bulletin #122 U. S. Bureau of Labor Statistics.

Employment of Women and Minors in the Laundry Industry; Second Biennial Report of the Industrial Welfare Commission of the State of California.

The Consumers' League of the City of New York cooperated in the study in order that, with additional investigators, an all-round picture of the worker might be obtained. By interviewing the worker in the laundry and in the home wherever possible, the League's investigators were to portray the social background, and relate the working life to home conditions. This part of the study was of necessity limited to women, although the Department of Health extended its examinations to men also.

Purpose of Study.

The questions relative to laundry workers which this study aimed to answer were these:

> *(1) To what degree does the handling of soiled and variously contaminated linen communicate tuberculosis and various acute infectious diseases to the women, girls and men, who are employed in sorting and marking for identification this miscellaneous material?*
>
> *(2) How are men affected by working in an atmosphere heavily charged with steam, often wading ankle deep in the water that comes from the washing machines, and lifting heavy bags of water-soaked clothes from the washing wheels?*
>
> *(3) Are there any injurious effects upon the generative organs of female workers resulting from the strain of long continued standing, of foot-treadle work, of shaking out crumpled clothes, and other activities incident to this industry?*
>
> *(4) Are there any physical strains or health hazards peculiar to this industry?*
>
> *(5) What effect do hours, wages, etc., have upon the health of the worker?*

The answering of these questions involved a complete and thorough study of the industry. It was necessary, first, to study the organization, processes of work, hours, wages and sanitary conditions in the work places; and, second, to determine by examination and investigation the physical and social facts about those employed in these laundries.

The investigation was made to this end, that suggestions based on expert medical and industrial knowledge might help eliminate any trade hazards which the industry might be found to possess.

Scope of Study.

Laundries Studied.

The material in this report on the general working conditions in laundries, is based on careful investigation of 42 steam laundries located in two boroughs of the city —Manhattan and Brooklyn. Chinese laundries and the thousands of hand laundries which dot almost every block in the semi-residential, semi-business sections of the city were not included.

Although the number of laundries studied is but a small fraction of the total number in New York City, it represents the various types that are important from an industrial hygienic point of view, and for this reason serves as an adequate basis for constructive criticism. The list of establishments visited includes 12 "family" or "bundle," 11 "flat work," 8 "agency," 1 "collar," 1 "shirt," and 9 "wet wash" laundries. (See Page 6 for a description of the different types of laundries).

The total number of employees in the establishments was 3,024, of whom 715 were men and 2,309 were women. This represents from one-fifth to one-quarter of all the workers in this industry in the two boroughs. In 1913, the latest date for which statistics on the subject can be obtained, there was a total of 11,406 men and women over sixteen years of age employed in the steam laundries of Manhattan and Brooklyn, 4,607 men and 6,799 women.*

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*New York State Industrial Directory, 1913, p. 104.

Medical Examinations.

Medical examinations were made of 68 men and 141 women to determine the effect upon them of the different processes and conditions of work. The results of these examinations are, we believe, significant and valuable from the point of view of research work along industrial hygienic lines. It is one of the first attempts to measure concisely the effect of certain factors of laundry work.

The medical examinations were made on the laundry premises, in rooms where the conditions with respect to privacy and freedom from noise were generally favorable. The men were examined by men physicians, and the women by women physicians of the occupational clinic under the supervision of Dr. Ray-Robinson. Clothing was removed down to the waist line for chest examinations, and footwear removed to observe the presence of flat-foot and varicose veins. Urinalyses were made in practically all cases.

It is obvious that the workers at different processes are subjected to very different industrial dangers. For example, the group of markers and sorters who handle soiled clothes are confronted by a set of hazards totally unlike those affecting the flat-work ironers. For this reason, the abnormalities found in the 209 persons physically examined will be presented according to the distinctive process of work. A separate section will be found summarizing health conditions of laundry workers as a whole.

In all medical studies of workers such as this, whatever the industry or occupation, the opportunities for investigation are necessarily limited to those employees who volunteer or who are persuaded to submit to physical examination. As a result, the picture of the disease which may properly be charged, in whole or in part, to a given trade or to a particular shop, is only fragmentary. This point deserves to be strongly emphasized and should always be kept in mind. In general, conclusions derived from a single medical examination of a group of workers are of limited value in the same way as an examination of a detachment of soldiers on the firing line would be. In examining such a group of soldiers, one would expect to find only a relatively small number showing disease, disability, or injuries which are incident to trench life, because, the sick, the maimed, the injured and the dead are promptly removed from the trenches and leave few traces behind for the casual observer. In order to get an accurate conception of the results of trench life, one would have to make extended observations of a given group of soldiers for a period of time during their service in active war duty and in the months following.

In the same way, occupational disease studies of the character carried out in our investigation of laundry workers give only the picture of the momentary condition of these workers; the sick, the disabled, and those whom the occupation has made the victims of disease are not found at the work bench.

Home Visits.

Four hundred and thirty-nine (439) women employed in the laundries were visited in their homes by investigators from the Consumers' League. The proportion of unskilled persons among this group was larger than among those physically examined. The medical examination was not compulsory and the ignorant, unskilled employee frequently refused to be examined. A large number who were unwilling to have the physical tests were visited in their homes, to determine their social background.

ORGANIZATION OF THE INDUSTRY.

Types of Laundries.

Within the group of power laundries there appear no less than six distinct types, differentiated by the kind of work the equipment permits them to handle.

The family or bundle laundry deals directly with the family, taking all kinds of family wash and returning the clothes washed and ironed, or washed and dried, but not ironed. It is of interest and importance from the standpoint of public health, that this type of laundry feels a sense of immediate responsibility to the family and produces, generally speaking, a higher grade of work. It employs methods which are far superior to those employed in the laundries which deal less intimately with families.

The *agency* laundry collects its work from smaller establishments which are dependent upon the larger steam laundries for the washing of their clothes. The agency laundry usually irons the flat work and sometimes collars, returning other articles to be finished by the hand laundry.

The *flat work* laundry limits itself to bed and table linen, towels and other distinctly flat work.

Collar laundries and *shirt* laundries form the most highly specialized branch of the industry.

Wet wash laundries are the newest development of the industry and are the most advertised at the present time. They take the miscellaneous family wash as a unit, wash and return it to the home for finishing.

Processes of Work.

Ten or more pairs of hands have a part in the laundering of table linen, towels or other flat work sent to the steam laundry. The chief processes are the following:

Marking and Sorting.

After the *driver* has collected the soiled linen from the family, the *marker* must label each piece with letter and number, or with a pin bearing a number. The small hand laundry marks its own work before sending it to the large steam laundry. Restaurant and hotel work needs no mark of identification but is passed through all the laundry processes as a unit. Then the *sorter* separates the linen into baskets according to the washing practice of the laundry.

Washing.

In the wash room, two sets of persons handle the clothes, the *washers* and the *helpers*. The soiled articles are piled in loose form or in open mesh bags into cylinders or revolving drums, known as wash wheels. After these have been closed, cold water is run into the cylinder with carbonate of soda and other chemicals added to assist in the removal of stains. Several changes of hot water are employed with soap and bleach in various proportions.

When the clothes have been rinsed in several waters, they are removed from the wash wheels and placed in extractors which correspond to the old wringer. These are perforated drums or centrifugal machines which revolve at high speed by electric power, and throw off by centrifugal force large quantities of the water with which the articles are saturated.

Shaking.

As the clothes come from the extractors, they are in tight, hard twists and must be straightened out, usually by hand, piece by piece, by women called *shakers*.

Mangling.

From the *shakers* the clothes go to the mangles—machines which dry and iron in one process. One set of women, the *feeders*, lay the pieces upon the feed roll and guide their progress through; a second set, the *takers off*, remove the ironed articles. Large clouds of steam usually arise from the contact of the damp linen with the hot mangle, making the work of the *feeder* more unpleasant than that of the *taker off*.

Several more persons have a part in the laundering of body linen. The processes are the same as those to which the flat work is subjected up through the extracting process.

Starching.

From the wash room, collars and shirts are passed to the starching department where the *starchers* either starch articles by hand, or pass them through starching machines where rollers rub in the starch. Next they are stripped or straightened out by women who rub them on tables with the palm of the hand, and hang them on hooks attached to a traveling chain which slowly carries the articles through the dry house.

Ironing.

Every collar must come in contact with at least five different machines, each operated by a different girl. One dampens it; another presses it into shape between heated rollers; a third dampens the seam or line where the collar is to be bent; a fourth folds the collar; and a fifth finishes it. Two more girls handle the wing collars; one dampens the seam of the wing, and the other folds back the wing. Another worker examines the finished collar for imperfections.

The ironing of some of the articles is still done by hand, but gradually machines are eliminating most of the hand work.

In 9 of the 42 laundries studied, shirt machine ironing departments have been installed. The cuff, neckband, yoke, bosom, sleeve, and body are all ironed at separate machines. (See Page 19).

Folding, Assembling and Delivery.

Folders next handle the linen, after which the *sorters* assemble the goods according to the identification marks. Then *tiers-up* prepare the bundles for the *drivers,* who return the work to the place from which it came.

AT WORK IN A LAUNDRY.

In the laundries studied, the men were outnumbered by the women in the proportion of 1 to 4, comprising 23.68% of the total working force. According to the Federal Census on Power Laundries, this proportion is somewhat larger in New York State as a whole. In 1914, the number of men employed in the laundries in this State was 31.9% of the total number of workers.* While men are employed occasionally at practically every type of work in the laundry industry, they constitute half the force, generally speaking, in the marking and sorting departments, and are exclusively employed in the wash room work.

Conditions of Work.

The Marking and Sorting Department.

In some of the laundries, upon delivery from the wagon to the building, soiled clothes are thrown into chutes and allowed to fall into compartments designed for the purpose. Where this occurs, as it does in one of the best managed laundries in the city, it constitutes a definite hazard to the health of those who are exposed to the dust inevitably raised.

In the family laundries, flat work, shirts and collars are usually marked with a number for identification. In the larger laundries, this marking of the flat work is ordinarily done by machine, but occasionally by hand with pen and ink. Shirts and collars are always marked by hand. The marking by hand brings the soiled work nearer the nose and mouth of the worker than the machine marking. Because of this fact the marking of handkerchiefs is especially to be condemned. In some laundries each marker works in an individual booth; in others, the work is done at a common table. Other articles than those mentioned, are usually identified by specially constructed safety pins, each bearing a number.

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*Department of Commerce: Census of Manufactures 1914: Power Laundries, p. 6.

The need for accuracy and clearness in marking necessitates good light. For this reason the marking department is generally found in the best lighted part of the building, and since artificial light is expensive it is usually located near the windows. Where artificial light is needed it is usually adequate and shaded.

In this department especially, adequate facilities for washing the hands are a necessity, yet they were found to be insufficient and inconveniently located in nearly every laundry. Hot water is scarce, hand brushes unheard of, and soap and towels only occasionally provided. Frequent washing of the hands is made virtually impossible on account of the long distance between the work place and the washing facilities. Sometimes it is even discouraged because of the employer's anxiety for uninterrupted work.

The dress worn by the markers and sorters is usually inappropriate for the work. Rarely is the street costume changed. Sometimes not even an apron is provided although occasionally an all-over apron is worn but often a diminutive one, offering no protection whatever. Frequently a marker is without a cap to protect her hair from the flying dust. In not one instance were gloves worn.

The carelessness with which the soiled linen is thrown about is very striking. There is no reason why soiled and dirty articles of clothes and linen should be thrown from place to place or even touch the floor, scattering dust for the workers to breathe. Baskets should be placed beneath the markers' table to hold the bulk of the large pieces while one edge is being marked. Baskets should also be provided into which the soiled articles may be sorted and in which they may be carried to the washroom. They should be placed in the wash-wheels directly from these baskets. (See Page 44 for effect of this process on health of workers).

Washing Department.

The work of the wash room is heavy and exhausting and must be carried on without intermission in an unpleasant and unhealthful atmosphere. Bundles of wet clothes weighing in some cases fifty pounds must be handled. The working force in this department consists exclusively of men.

On account of the dampness which is bound to accompany this work, it is essential that the workroom should be well aired and well ventilated, to insure the removal of moisture; that the floors should be of such material and so constructed as to allow the water to be properly drained; and that facilities be provided for a change of clothing.

In point of fact, of the 42 laundries visited, cellar wash rooms, poorly lighted and improperly ventilated, were present in 17 instances. It is our opinion that from the standpoint of the health of the worker, the law should forbid a laundry to install its wash room beneath the street level.

The effects of work in a damp wash room are made worse by almost complete lack of provision of dressing rooms where a change of clothing is possible. In more than half of the wash rooms, street clothing was seen hanging upon the wall with no adequate protection from moisture.

A few laundries had provided shower baths adjoining a dressing room, which materially reduced the unhealthfulness of the occupation.

The stockings of 29 out of 38 men examined were wet through and through and those of 9 only were dry. A number of these men were examined on days when very little work was being done in the wash room, which probably accounts for even so large a number as nine having dry stockings. None of the workers in wash rooms, the floors of which were maintained in a dry condition, were examined, for we sought examinations in men exposed to the hazards of the industry.

Of 292 men examined as to foot gear, only 196 wore leather shoes, the only comfortable shoe for any foot.

The wooden-soled shoe is inflexible and difficult to manipulate but was found on 54 of the workers. Rubber boots were worn by 33, rubbers by 8 and arctics by 1. The rubber causes sweating and tenderness of the feet and is generally unsatisfactory. Wet feet should be prevented, however, not by the wearing of any special shoe, but by the maintenance of the wash room floor in a dry condition.

The condition of the wash room floor is a better index of the health condition of the persons working in a given establishment than laundrymen admit. They claim there is no prevalence of rheumatism, disease of the nose, throat and lungs, etc., resulting from constant walking on flooded floors and working in an atmosphere heavily saturated with moisture. They attribute this immunity to the free use of washing soda, lime and other chemicals which they believe possess preventive powers. (See Page 47 for effect on health of workers).

In only three of the 42 laundries were the floors maintained in dry condition. In 38 places the floor was of cement, as it should be in all cases. In 32 the slant of the floor toward the troughs and drains was good and in 21 the floor was in good repair. The heavy trucks used in the wash room wear holes in the floor which necessitate constant repairs.

The trucks which carry the wet goods from the wash-wheel to the extractor should be water-tight and kept plugged until the water can be emptied into a trough or drain. Trays, properly fitting over the edge of the wash-wheel and of the truck are needed to permit dripping while lifting the goods. In 3 laundries proper trucks, properly used, were found. Some employers provide properly constructed galvanized iron trucks with exit pipe, but employees carelessly fail to keep these exit pipes plugged and so the water runs freely over the floor.

The closing of wash-wheel covers while in use is another essential to dry floors. In 27 of the laundries this precaution was observed. In the remaining 15, the water slopped in quantities over the floor. In 28 places the extractors properly discharged into troughs or sewers, but in 14 the water flowed freely over the floor. In 34 of the wash rooms, troughs under the wash-wheels were of a capacity large enough to hold all water discharged from the wheels until it could escape into the sewer, but in 8 the troughs were wholly inadequate.

Safety Devices.

The extractors revolving at terrific speed are extremely dangerous if uncovered. More than one foreman told of the loss of an employee's arm from this cause. In only 3 laundries an automatic mechanical device had been installed, which would prevent the operation of the extractor unless the cover was in place. This is the only thoroughly safe method and one which should be more generally adopted.

In 34 laundries some kind of safety device had been placed on the covers of the extractors, but in 23, almost 75%, they were running with covers not in place. In 7 wash rooms not even a cover had been provided.

In some of the laundries where the use of the safety device is dependent upon the workman, employers claim that the men feel they delay work and so will not bother with the devices. In some cases, the workman had purposely broken them. In only 3 laundries were the devices effective. One of these places was a flat work laundry where the pressure of work was the heaviest.

Warning signs and verbal instructions as to this source of danger were lacking in almost all laundries—a very serious situation since most of the workers are inexperienced, ignorant and foreign. In one large laundry where no safety devices were used, a special man was employed to see that covers were in place, and at no time was a machine seen in operation unless properly guarded.

Accidents.

Eighty-one accidents were reported in laundry work in New York State and, as given in the Bulletin of

Statistics for Industrial Accidents for the year 1914, are as follows:

7 due to power transmission machinery, of which 3 were slight;
44 due to working machines, of which 14 were slight;
3 due to heat and electricity;
13 due to a fall;
3 due to weights or falling objects:
4 to miscellaneous causes.

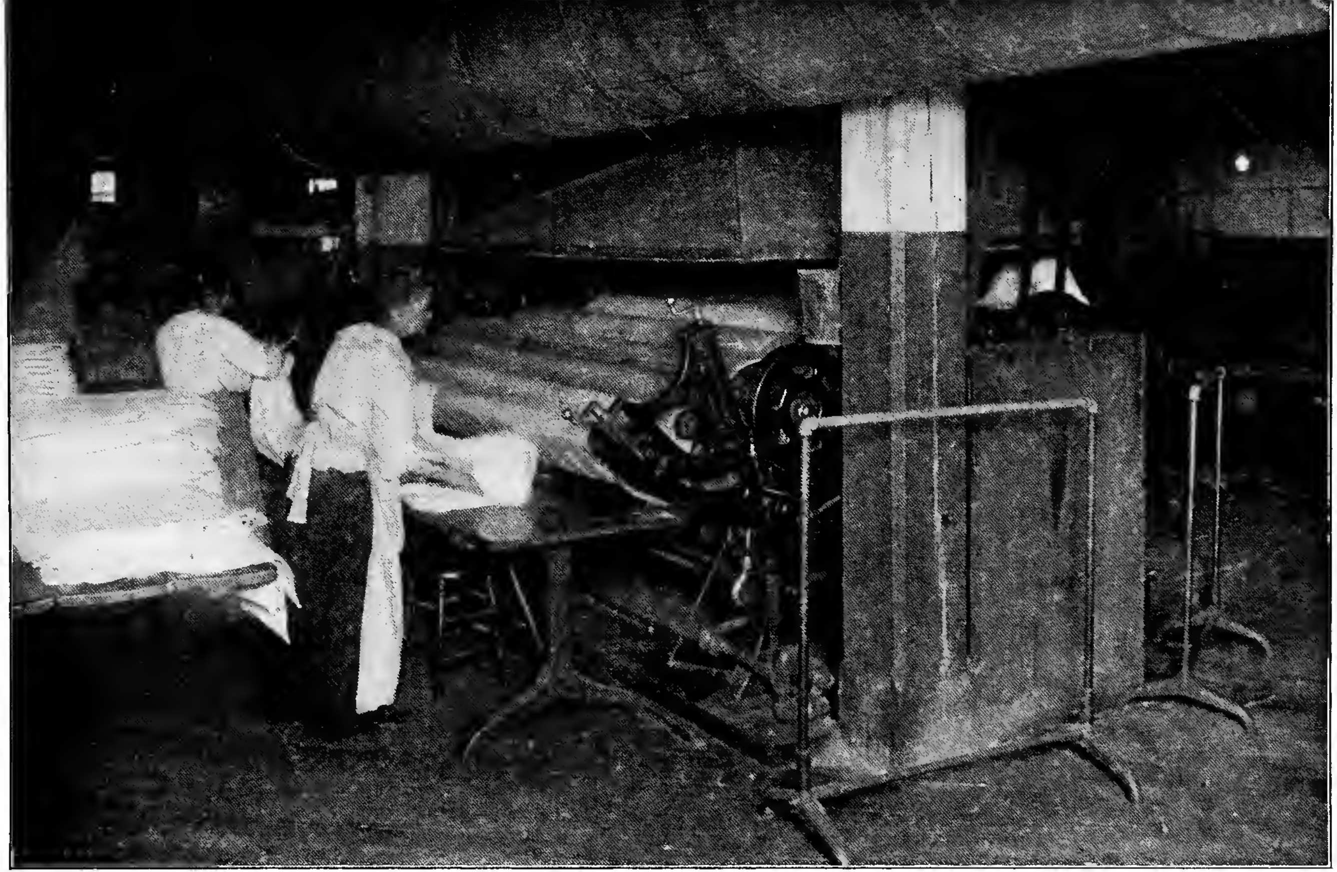
Of the 44 accidents due to working machines, 11 were investigated by the State. In 4 a guard was used, in 1 the guard was not used. In 2 the guard was not practicable, and in 4 no guard at all was provided.

These figures, which probably represent only a small proportion of all accidents in the laundry industry, help to confirm us in our belief that extractors should be guarded and the floors should be kept dry to prevent slipping.

Flat Work Department.

The goods coming from the extractors are tightly twisted and must be straightened out before ironing. This is done by shaking. Six of the laundries have learned that it is more economical to do this shaking by machinery. A perforated cylinder called a "tumbler" which revolves first in one direction and then in another is used for this purpose. In 6 other laundries the table linen is treated in this way to remove the lint, and the small pieces because of the difficulty of shaking them by hand.

In 17 of the 29 laundries, all the shaking of both large and small pieces is done by women instead of machine. Two women handle the large pieces, each taking one end and shaking until it is straightened, when it is laid on a table. This heavy work which strains the back, shoulders, arms, wrists and hands is done almost entirely by elderly women who stand while working. The method is uneconomical to the employer and an ordeal for the worker.



An Old Style Flat Work Department. Note low ceiling causing great heat and poor ventilation.

When the work has been prepared by shaking, it is pushed on tables or racks to the flat work ironing machine, where it is fed between heated rollers by women called feeders. The work passes between several sets of rollers and comes out ironed at the other side of the machine where the takers-off remove and place it in piles on the table. Two women work together on each side of the machine ironing large pieces, each handling one end.

The vast amount of this work is done in a standing position and the laundrymen insist it must be so done because of the large range of motions required. The greater part of this motion, however, is due to the fact that the tables receiving and holding the work are behind instead of between the workers. When tables are placed between them, they work with ease in a sitting position. So far no stool with a low back has been provided in any of these establishments, which will serve as a rest, without interferring with the work.

In one of the biggest flat work laundries all work is done in a sitting position, every worker having a seat. Tables covered with zinc, over which the clothes slide easily, are placed between the workers. In a few other laundries, those handling small pieces are seated, but in most of them no seats are provided.

The heat and steam from the machines is sometimes excessive. This depends upon the amount of moisture in the clothes, which in turn, is dependent upon the length of time the clothes have been extracted or wrung out. It is one of the problems of laundrymen to regulate the time of extraction for reasons of economy and of the comfort of the workers.

When the ceiling of the room is high, air space adequate, and natural ventilation good, no artificial ventilating device is necessary. The new flat work machine is low and is more satisfactory in this respect than the old high machine where girls stand on a platform sometimes several feet above the ground. This system lowers the ceiling in proportion, and so allows less circulation of air.

When natural ventilation is insufficient, hoods are placed over the machines and connected with a large duct in which fans are placed to withdraw forcibly the heat and steam. To be effective the exhaust system must be sufficiently large and powerful, and the hoods must come well down over the machines. Sometimes this condition is helped by drop sides extending from the edge of the hood to the machine. These sides are made of sheet iron or glass. Glass screens demonstrate to the observer the great clouds of steam that rise from the work and saturate the atmosphere when not drawn off by suction devices.

Occasionally the moisture is drawn off so rapidly that a condition of dry heat is produced, dangerous to the worker. In very few places have tests ever been made by the laundrymen to find out the state of the atmosphere. (See Page 49 for effect of this process on health of worker).

Starching Department.

Collars and shirts are passed from the wash room to the starching department. Cold starch is being substituted gradually for the hot starch, which was formerly used exclusively. It is more economical to the laundryman, because the time required for extracting goods which are to be cold starched is much shorter than when hot starch is to be used, as well as being more satisfactory in eliminating much heat and steam from this department. Seven laundries at the time of this study were using it, three laundries were using it in part, while eleven laundries still used hot starch.

The articles pass through starching machines where the starch is rubbed in by rollers. They are then stripped or straightened out by women who rub them on tables with the palm of the hand. After this, they are hung on hooks attached to a traveling chain which slowly carries them through dry houses and large compartments heated with dry heat to a temperature of about 140° Fahrenheit. As they emerge they are automatically removed from the chains and dropped into boxes. A few laundries still use the old style rack on which the collars are hung, these racks being pushed by the workers into the dry house. When the clothes are dry, the racks are pulled out, and the collars removed by hand. This work in close proximity to the dry house is not without hazard from excessive heat.

The close location of this department to the dry room, often allows the heat from the dry room to escape into the starching department. In ideal places, the dry room is shut off by protective walls. This saves the employer's fuel and also adds to the comfort and health of the employees. (See Page 51 for effect of this process on worker).

Collar Department.

As the collars come from the dry house they pass through various processes in the hands of the collar girls. They are dampened by machines, packed into boxes where they are compressed for a time and ironed between heated rollers. The seam, or line where the collars are to be bent is dampened by machine and the collar is folded and finished by machine. Finally it is examined by a special worker to detect imperfections in the process. The wing collars are subjected to still another process in which the seam of the wing is dampened and the wing folded back. This collar is also edged by machine. Collar work is highly specialized. It is light work but requires many motions and is trying to the eyes. Constant watching of these flying small pieces of white work often causes marked eye strain to the workers. (See Page 51 for effect of this process on worker's health).

Family Ironing Department.

In the past, family ironing has been done entirely by hand. Lately the tailor's press has come into use for aprons and ordinary plain articles. This machine consists of an ironing board on which the article is placed; a steam chest is then lowered upon the article by means of a foot treadle, assisted by a hand rail. These presses are usually worked in pairs, the operator alternating from one to the other. Some of them are so constructed that it is necessary for the weight of the operator's body to hold the treadle in place throughout the ironing operation. The treadle is very high, sometimes 13½ inches above the ground, and the body weight must be lifted to this height each time the machine is operated.

Hand ironing is either done by the old-fashioned iron, heated over a gas flame, by an iron to which a gas pipe is attached, or by an electric iron. The floor in this department is often of hard material, because the Fire Department has demanded fire-proof floors and ironing boards. Cement, iron and zinc floors were frequently seen, causing hardship to the workers who must stand all day. Asbestos mats are recommended to eliminate these difficulties.

The Shirt Machine Ironing Department.

Only 9 of the 42 laundries had machine ironing departments. When there is such a department, each part of the shirt—cuffs, neck band, yoke, bosom, sleeves and body—is ironed at a separate machine. For the first three parts mentioned, the operator walks from machine to machine, putting the work in place, clamping it under the steam-heated chest and later releasing it by means of a foot treadle. Each operator cares for two or more machines, so that there is not a moment of idleness.

The bosom of the shirt is ironed on a swinging machine which accommodates two shirts. While the operator is arranging one shirt upon the frame, the other shirt bosom is being ironed under a steam-heated chest. The operator stands in one spot operating with her foot the treadle which clamps into position or releases the shirt under the steam chest.

The sleeve and body machine usually consists of two cylinders, one of which is heated, and between which the work is passed. The new type of machine has a steam chest, but most of the older machines are heated by a gas flame burning within one of the cylinders, and setting free more or less carbon monoxide. The operator passes the work between the two cylinders, and then, by foot pressure on a treadle, brings the cylinders into contact and keeps them revolving. Usually the treadle is large enough for the whole foot and the weight of the operator's body is put upon one foot all day. Many of these workers complain of pain in the thigh and pelvis and lower part of the abdomen, on the side where the foot is so used. Most of these machines have a second treadle to reverse the cylinders of the machine, and this treadle is operated as needed by the other foot. Some of these machines are provided with a second set of treadles to be operated in a sitting position, but nowhere in New York City were these used.

The height of the treadle of the machines varies from two inches to twelve and one-half inches above the floor or platform provided, the lower treadle being obviously best for the health of the operator. The newer machines operate by air pressure, just a touch of the treadle being sufficient to operate it, a great improvement over the old way of exerting pressure with the entire body weight.

The method of passing articles from operator to operator is important from the standpoint of the expenditure of energy and time, and the careful handling of goods. Three laundries used traveling chains, three had sliding frames and the remaining three had no special method.

Considerable heat is often present in this department. The worker is protected in some places by asbestos coverings over all heated pipes. The heat which comes from the body machines, which are used not only to iron the body of shirts but also to iron white coats used by barbers and waiters, should be carried off by hoods and exhausts. Chairs for the use of the operators during slack moments were sometimes found. (See Page 52 for effect of the process on these workers).

Assembling Department.

The work of assembly, both for rough-dry and finished goods, is important because of the need for accuracy, a mistake being costly to the laundryman. For rough dry work, each piece with its identification pin is hung and then bundled.

Finished or ironed work is put into piles by the markers and sorters. At the beginning of each week or day, some or all of this force has been at work marking the soiled linen. The rest of their time is spent in assembling the clean work. Obviously there is danger that those passing from soiled to clean work may carry contagion unless they have changed their clothing and thoroughly cleansed their hands. There is also the possibility that clean work may be contaminated if the soiled clothes are handled in too close proximity to it. This was found to be the case in 16.6% of the laundries studied.

This work of sorting and assembling is a strain both upon the nervous system and upon the eyes.

Delivery Department.

Family or bundle laundries deliver their work to the individual customer completely wrapped. Sixteen flat work and agency laundries were found lacking in this respect. Clean clothes were returned in baskets which had previously held soiled clothing with no protective lining. Paper was sometimes placed on the bottom and top of the basket but none on the sides, an apparent menace to the public. The wet-wash laundries likewise erred in this regard. One of them returned goods loose and uncovered in baskets which were placed one on top of the other, resting upon the wet clothing.

Recapitulation of Physical Working Conditions.

In reviewing the conditions of work in the 42 laundries covered in this study, certain factors stand out as having a very definite economic significance in their bearing on the health of the workers.

Wet floors and excessive humidity in the wash room caused by the nature of the work, are in most cases aggravated by improper ventilation and lack of accommodations for making possible a change of clothes. At least 7 of these 42 laundries presented such marked

unsanitary conditions that any remedy suggested would entail prohibitory expense. *Mechanical ventilation,* however, had vastly diminished the undesirable humidity in slightly over half of the establishments.

Thompson in his "Occupational Diseases" says that "the most desirable relative *humidity* of the workroom is 55° to 65° with the air changed three times in an hour." Others say that 65° F. with a relative humidity of 65° is best for health.

Nowhere were conditions found as favorable as suggested by Thompson and others. The wash room showed in all cases wet bulb reading above 75°, the highest being 85°—and a dry bulb reading over 83°; the highest being 96° with corresponding wet bulb reading 85°.

In the mangle department, the relative humidity was too low compared with the dry bulb temperature, the lowest being 35° with a temperature of 88°. Twenty-four of the 36 readings made, were below 50° relative humidity, and in 26 of the 36 readings, the dry bulb temperature was over 80°. Twelve others showed a relative humidity between 50° and 60°, and ten showed a dry bulb temperature between 75° and 80°. The highest temperature noted was 100° with relative humidity of 47°.

Tests were made in 19 laundries visited on five days from March 29 to June 22, 1917 by means of the Tycos Hygrometer, (sling type). Wherever possible these tests were made in the wash room at the feeding and taking off side of the mangle, in the starching department and in the shirt machine ironing department at the spot where the worker usually stands. Our findings were as follows:

Tabulation of Temperature and Relative Humidity in Laundries

Date 1917	Wash Room		Flat Work Feeding—Taking Off				Starching		Machine Ironing		Outside condition according to report of Weather Bureau Station in Central Park	
	Temp	Rel. Hum.	Temp	Rel. Hum.	Temp	Rel. Hum.	Temp	Hum.	Temp	Hum.	Mean Temp for day	Relative Humidity at same hour as our tests were made
3/29	71	73	75	59	75	48	..	..	..	..	46	42
3/29	83	77	75	59	82	49	78	46	..	..	46	48
3/29	71 ..	66 ..	74 84	51 46	76 84	45 42	78 ..	53 ..	74 ..	44 ..	46 ..	55 ..
3/30	60	73	..	..	..	..	..	..	..	..	44	27
3/30	80	68	82	49	80	47	..	..	..	..	44	25
3/30	80	51	84	35	75	44	..	..	..	..	44	25
5/18	75	59	82	46	82	46	..	..	..	..	58	30
5/18	84	50	86	39	88	35	86	39	..	..	58	30
5/18	86	60	80	38	77	39	..	..	..	..	58	29
5/18	80	61	80	35	78	37	..	..	..	..	58	30
6/20	88	61	90	59	90	56	..	..	.	..	72	48
6/20	86	63	77	60	77	52	..	..	..	..	72	48
6/20	84	70	..	..	..	..	..	..	..	..	72	48
6/20	88	71	..	..	..	..	..	..	..	..	72	55
6/20	92	78	..	..	..	..	..	..	..	..	72	55
6/20	88 ..	55 ..	94 96	52 42	100 .	47 ..	.. ..	.. ..	.. ..	.. ..	72 ..	48 ..
6/22	88	88	92	51	94	54	86	57	88	58	76	31
6/22	96 94	64 44	90 ..	50 ..	90 ..	39 ..	90 ..	47 ..	90 ..	44 ..	76 ..	30 ..
6/22	88 82	61 55	88 ..	46 ..	92 ..	43 ..	88 ..	43 ..	.. ..	.. ..	76 ..	27 ..

As regards *dressing rooms,* while such provisions are required by law where women are employed, in but half of the work places were they wholly adequate. Few establishments attempted to provide facilities for the convenience of men, and in the dampest of wash rooms street clothes were hung on the walls.

As but 4 of the laundries had provided a *lunch-room,* not even during the lunch period did the workers leave the over-heated humid workroom.

Moreover, in not one case had there been installed a sufficient number of *troughs* with hot and cold running water for the number employed, and although 4 or 5 firms provided some style of individual *towel*, one-half of the establishments frankly stated that they supplied no towel whatever, and 3 maintained a common towel.

Just as washing facilities had been overlooked in the laundries, so also had proper provision for *drinking water*. In almost half of the laundries it was the custom to wash and drink from the faucets over the tubs. In some of these laundries employees were forbidden to use these faucets while there were clothes in the tubs. In 9 wet wash laundries where a separate faucet was provided there was no sink, allowing the water to spatter upon the floor. In very few laundries were *bubblers* installed.

In three-fourths of the laundries the number and condition of the *water closets* for women were satisfactory; but in 9 cases there were obvious defects in cleanliness, number per capita, or repair. In 14 of the laundries the toilet arrangements for men were unfit for use. The lack of cleanliness found in 10 instances is partially explained by the fact that the men workers are expected to clean their own watercloset apartments.

In view of the admission that many processes of work can be done more effectively when the worker is seated, the inadequate number of *seats* is striking.

	Adequate Seats	Some Seats	No Seats at all
Marking Department	6	0	9
Flat-work Ironing Department	1	9	19
Starching Department	1	3	17
Collar Ironing Department	7	6	8
Shirt and Family Ironing Department	2	5	9

Only 3 of the 42 laundries provided a sufficient number of seats for use during working hours. Only 8 had made suitable accommodations of this kind for the workers during the lunch hour.

The presence of so many factors which tend definitely to reduce the efficiency of the workers is significant and must be borne in mind in relation to the type of worker found in the industry, the hours worked and the prevailing rate of wages. It will be wise to reconsider this subject briefly in considering the effect of working conditions on the labor force.

Hours of Work.

One of the outstanding features of the laundry industry is the irregularity and variation in the arrangement of work and hours during the week. Ships are often irregular in their schedules, but their laundry work must be done quickly upon arrival. Transients in the city, likewise, must have their clothes washed and ironed in the minimum amount of time. Even those of us who are in no haste for clean clothes are accustomed to think that laundry must be collected Monday morning and delivered Saturday night. We, who in the last analysis are the chief patrons of the steam laundries, have not realized how this idea has been accepted by laundrymen and how it has affected their business.

Drivers collect the clothes on Monday morning. Then they must be marked, sorted and washed. In many laundries the starchers begin work at 10 A. M. Monday and are through their work for the week at the same hour on Friday. Collar girls and women working on the mangles frequently are not needed before 1 P. M. on Monday. The persons engaged in folding, tieing up, etc., begin work even later. The result is obvious. Work must be done on time. Tuesday, Wednesday and Thursday are usually very busy days. When asked about closing time, the girls universally replied, "We go home on Saturday when our work is done. Sometimes it is 3, sometimes it's 6."

Women's Working Hours.

Thirty per cent of the women interviewed worked ten hours at least one day every week, and twenty per cent worked ten hours four or five days every week.

Though the law limiting the working hours to 54 a week applies to laundries as well as to factories, the enforcement of the law is another thing. Twenty-seven per cent of the girls reported working beyond the 54 hour limit. They begin 10 or 15 minutes before scheduled time in the morning, a 60 minute lunch hour is cut to 45 or 50 minutes, and they are kept a little after the scheduled time at night. In this way many employers get in 3 or 4 hours of extra work each week with little chance of being detected.

Men's Working Hours.

The hours of men workers are not regulated by law, as are those of the women. The wash room workers frequently labor ten to eleven hours per day, six days a week, lifting loads of heavy clothes into and out of the wash-wheels and extractors.

The day's work for these men begins often at 6.30 A. M., and lasts until 7.30 P. M. In order that families may receive their goods so as to be ironed on time for use on Sundays, the wet wash laundries are kept working at great pressure the first four days of the week, while during the latter part of the week they are, in most cases, comparatively inactive.

Luncheon Period.

The luncheon period varies in length in the different establishments. The New York State Labor Law allows it to be cut down from one hour to forty-five or thirty minutes on condition that a permit to this effect is granted by the Commissioner of Labor and is conspicuously posted. Over one-half of the laundries gave a one hour period, a few three-quarters of an hour, and about one-quarter gave a half hour luncheon period. Where work is as much of a strain as it is in this industry an hour for rest and a suitable place for resting during the noon period is essential.

In one of the laundries investigated no lunch period was granted the men, and in fact, in a number, men were seen to eat their lunches while continuing at their work, so as to lose no time,—so great is the pressure during certain parts of the week.

Saturday Half Holiday.

Seven laundries only had arranged a Saturday half holiday schedule. A few gave two half holidays, Monday morning and Saturday afternoon. In the remaining 35, work was carried on 6 full days each week, in several places the girls being allowed to leave on Saturday when their work was done. One of the women said "When we have to stay late it seems as if the end of the day would never come."

Wages.

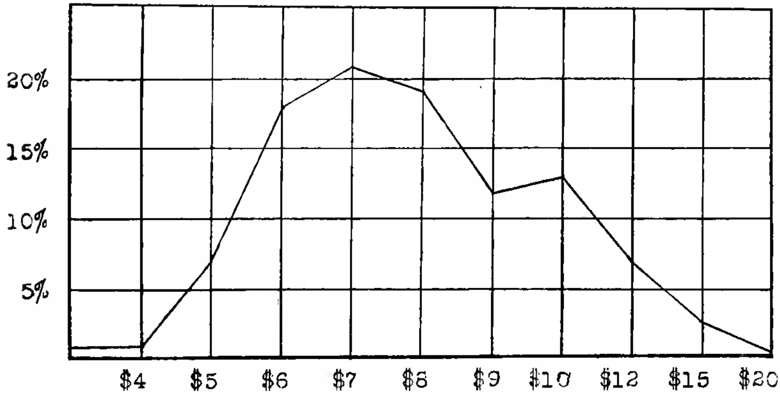
In 1915, the lowest wage upon which a girl could be self-supporting in health and decency in New York City was officially estimated at $9.00. During the past two years, according to a conservative estimate, the cost of living has increased 30%. At the present time, then, a girl's wage must be at least $11.70 to meet the minimum standard that will keep her well and fit to carry on her work. Can the wages paid to women in laundries meet this test?

A glance at the accompanying diagram, based on the statements of the girls, will show that more than one-fourth received $6.00 or less, that nearly one-half received $8.00 or less, and that 80% or four-fifths of these women received under $10.00 a week. In other words, less than one-fifth or 20% are earning enough to live on.

This testimony of the girls is borne out by the statement of the employers, each of whom was questioned on this point. The lowest wage admitted by any employer was $6.00 per week; two laundries claimed that their lowest wage was $8.00 per week; and the average ranged from $6.50 to $9.00 per week.

The wages paid the different groups varied. Basing figures upon the statements of the girls, the wage was lowest among the shakers, their average being $6.27, many of them receiving only $4.50. The feeders and takers-off drew the next lowest wage, averaging $7.10 per week. Because of the unpleasantness of the steam connected with the feeding, feeders receive usually a dollar more per week than the takers-off. Collar girls came next in the list, averaging $7.66. Starchers received on an average $8.80 per week. The women operating the machines are among the better paid, those at the body-machines averaging $9.37, those at the others receiving $9.96. Much of this work is piece work. Markers and sorters received the best pay, averaging $10.52.

Of the forty-two laundries studied, only five were conducted entirely on a piece-work basis, twelve having piece work in part. The others were on a week work basis.



"But," you say, returning to the small wages received by the girls, "these girls *do* live and are able to work. They get some enjoyment out of life. Does not this prove that a $11.70 standard is unnecessarily high?"

One answer to this question may be read in the records of charitable societies. By registering the names and addresses of the workers interviewed, in a confidential exchange, it was found that 16% of the families from which they came were known to the relief societies of New York City. The relation of insufficient wages to poverty is too obvious to need comment. Outside of a Utopian dream, poverty can probably never be blotted out as long as human beings are human. There are innumerable elements that go to make up the sum of human misery. But a vast amount of poverty exists at the present time because a large proportion of the population are receiving inadequate wages.

The other answer is that these women simply do without the things that make for decent, healthful living. To some, low wages mean lack of proper clothing. They do not freeze to death in winter, but exposure without sufficient protection causes illness or the wearing down of resistance until the system is ready to go under at the attack of disease.

To others, low wages mean lack of proper food. They do not starve to death, to be sure, but their food is either poor in quality or deficient in quantity or both. Malnutrition and anaemia are common guests in the homes of the poor. The physical examinations substantiated this, 20% of the 195 cases, upon whom blood tests were made, showing anaemia. (See Page 64).

To others, low wages mean living in congested quarters under unhealthful conditions. Poor sanitation, danger from fire, small dark rooms without light or air, over-crowding, lack of privacy,—these are the things that fall to the lot of the under-paid worker. And they are not merely theoretical deductions. They are actual facts, exemplified very clearly among the women seen in the course of this study.

Relation Between Conditions of Work and Labor Force.

In general, the laundry industry in New York is not affected greatly by seasons. The work of the family laundry decreases in summer, but the flat work laundry is usually busier. In the Federal Census, the variation in the number of laundry workers the 15th of each month for 1914 is reported to be 5.28% for the country as a whole.* For New York State the variation between the maximum and minimum force is about 4.72%.**

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*Department of Commerce: Census of Manufactures 1914: Power Laundries p. 7.

**Department of Commerce: Census of Manufactures 1914: Power Laundries p. 8.

Statistics on this point were not gathered in this study, but employers and employees claimed very generally that the distribution of work throughout the year was even. According to their statements, a laundry worker is seldom laid off in New York because of slackness or decrease in the amount of work to be done. In the light of these statements, the following facts are noteworthy.

Broken Time.

Information was obtained from 354 girls as to the amount of time they had been idle during the past year. Eighty-seven (25%) of the number claimed they had not missed one day. Two hundred and fourteen (35%) had been away from work less than one month. The rest of the women (40%) had been idle anywhere from one to ten months. Fifty-two (14.7%) reported over six months of idle time during the year.

Very few of the 354 questioned on this point had been at work less than a year. Some had changed from one place to another and taken a vacation in the interval. Several had found that they could not stand the heat in summer and so worked in the laundry only during the cold weather.

This record of unemployment is highly significant. That 40% of the women were idle from one to ten months, that 14.7% were idle six months in the year is a grave reflection on any industry. It shows an extraordinary indifference on the part of the management to the labor cost and apparently entire ignorance of the fact that sound business policy is best served by satisfied and healthy employees, whose regularity can be depended upon.

Labor Turn-over.

Another outstanding point is the constant shifting from one place and one line of work to another which characterizes the shakers and the workers engaged on unskilled work. The average helper in the wash room, for instance, gives a history of having tried his hand at a great diversity of trades and having stayed only a short time in any one of them. In one laundry the employer stated frankly that his shakers seldom stayed with him more than three days. Many of them were new every day. As in not one instance were turn-over records kept, it is impossible to state the per cent of labor turn-over. Although the testimony from the majority of employers is that it is very high. Some employers attribute this big turn-over to the fact that these workers are the lowest and most uneducated type, lacking all sense of responsibility and stability.

Apparently, as the above figures prove, the employers as a whole are satisfied with a force of workers which is constantly shifting except in the best paid positions. The time-keeping even of the regular employees is bad, the girls drop out for a day, returning to the jobs without any apparent effort on the part of the employer to determine the cause of this irregularity and to take the necessary steps to stabilize his labor force. Most laundries are still run on the antiquated principle as far as the employees are concerned, that over-time and rush work can take the place of good management and supervision.

In practically every laundry the question of grievances of employees, of discharge, and shop discipline is met in a most unbusiness like and anti-social way. Shop committees composed of representatives of the employees and the management which are recognized as the most efficient method of meeting these problems, are almost unheard of.

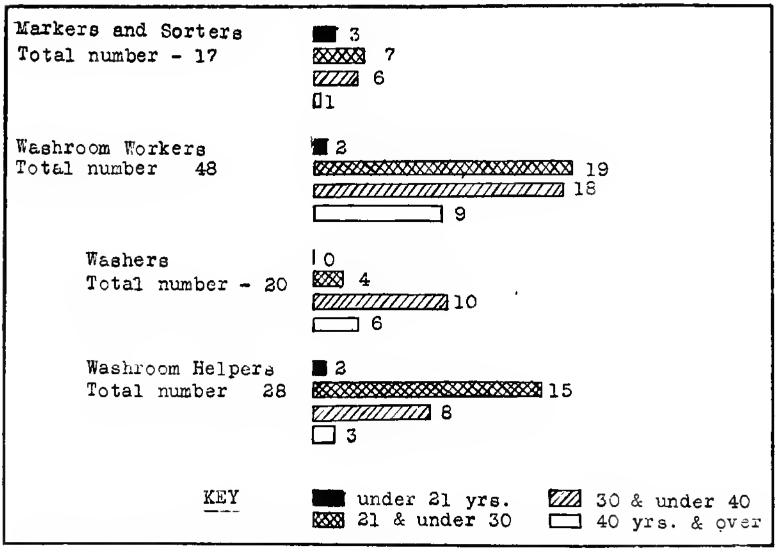
The foregoing study has given ample evidence that the organization of this industry is lacking in consideration of the factors promoting efficiency in the working force. Absence of essentials for comfort, health and safety are reflected in the shifting of workers; low pay reduces the workers' ability, and long hours increase the accident risks and poor work. Prospect of advancement from one occupation to another is overlooked. Four laundries gave no holidays throughout the year, over one-half observed only four. Practically no efforts have been made to eliminate unnecessary fatigue by sufficient chairs, steady light, rest periods or change of occupation.

There are, however, a few laundries where consideration has been given to these conditions; in which a system has been worked out whereby work is evenly distributed and hours are regular throughout the week; where up-to-date machines have been introduced; a decent living wage is paid, and good efficient service is rewarded by advancement. These laundries attract and accept only the more intelligent class of employees. Needless to say, their labor turn-over is reduced almost to a minimum.

THE WORKING FORCE.

Men.

The following social survey of men is limited to the 68 who submitted to medical examination. Though the observations that follow are based on the study of a small number of male workers, they are essentially applicable to the entire group, as a careful study of a number of other workers has indicated. A number of interviews were held with varied groups who were not examined physically, to confirm the reliability of the statements here made.



AGES OF 65 MEN EMPLOYED IN LAUNDRIES ACCORDING TO OCCUPATION

Age.

Half of the men in the marking and sorting departments were over 25 years of age, while in the wash room, two-thirds of the men were over 25 years of age. The wash room workers were divided into two groups, the washers and the helpers; the washers are comparatively few in number; they are more experienced and of somewhat advanced age groups. The helpers are virtually laborers working under the direction of the washers, and generally speaking, of a lower age group. The turn-over among these workers is very much greater than among the more skilled workers.

Nationality.

Among the 68 male workers who submitted to physical examination, only 27% were native Americans. The male markers were drawn chiefly from among Russians, while in the wash room the chief nationalities represented were in the order of their numerical importance, Italians, Austrians and negroes.

Wage Versus Family.

Ten out of the 17 markers were married, the average family consisting of two adults and 2.9 children. The average weekly wage was $16.70. Fourteen of the twenty washers were married, the average family among these consisting of 2 adults and 3.16 children, with an average weekly wage of $19.00. Of the wash room helpers, 16 of the 28 were married, the average family consisting of 2 adults and 2.5 children with a weekly average wage of $14.00. A number of these married helpers made as little as $ 11.00 per week.

Recreation and Education.

The exhausting character of the work performed by the men in the wash room may be judged from the fact that few of these workers secure any recreation whatsoever. Coming home fatigued from work they eat their evening meal, and more than 50% of those who were questioned stated that they invariably went to bed before 9 o'clock.

It is significant, also, that 96% of the men in the wash room, where the hours are longest and conditions worst, were addicted to alcohol. Undoubtedly, the fact that the men employed in this department suffer from fatigue and over-strain causes them to indulge in this unnatural stimulation.

The markers and sorters are apparently the most intelligent class of laundry workers, their work demanding both accuracy and quickness. The washer is a skilled laborer, while his helpers are, as a class, uneducated and of a much less intelligent type; those of the latter who show any relatively marked intelligence have the opportunity of becoming washers.

Previous Occupation.

Among the markers and sorters whose average age was 27 years, the average length of employment was found to be 8 years. The washers, who were the subject of this study, were of an average age of 34 years, and had been working an average of 9 years in the wash room, having advanced from the position of helpers. The wash room helpers, being in reality laborers, require little special skill, drift into this trade and out again, and rarely remain for a long period of time in the industry.

Women.

Age.

The steam laundry employs a group of women older than that found in industry as a whole. Considerably more than one-half of all the women and girls working in stores and factories are under 25 years of age.* Considerably more than one-half of the women employed in laundries are over 25 years of age. (See accompanying diagram).

In general, the processes involved in flat work require little skill. Women who are forced into industry by necessity without previous training except perhaps domestic service, can easily pick up a knowledge of the work. This is particularly true of the shaking department, where a large majority of the women are over 40 years of age, many of them widows who have brought up their families and must earn something. These are a pathetic group to be met in almost every laundry, often old, bent and stiff, working with trembling hands and hard put to keep up with the pace of the younger women. Many of them are too old and incapacitated for the constant muscular exertion which shaking requires.

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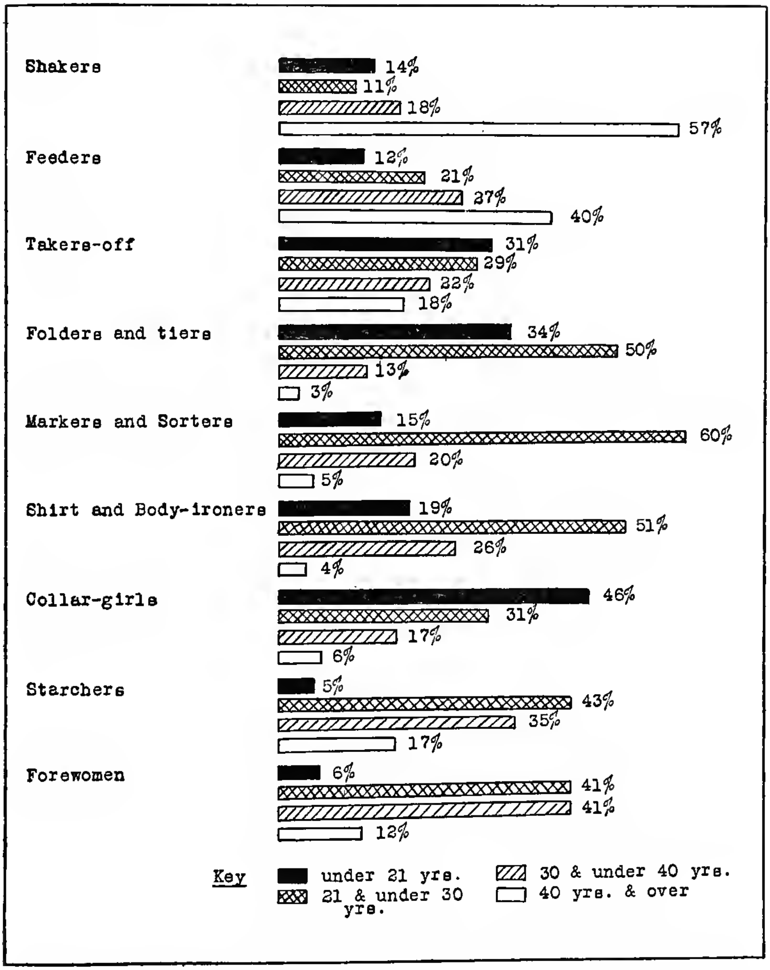
*Conditions of Labor in American Industry, by Lauck and Sydenstricker p. 264.

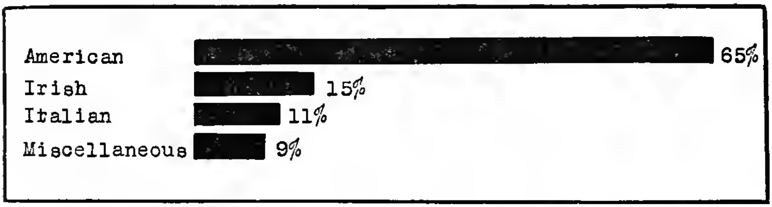


Ages of Women Employed in Laundries According to Occupation.

Older women are found also at the feeding and starching, where conditions of work are not pleasant.

It is difficult to keep dry and avoid the spattering of starch; so, although the starchers are among the best paid group in the industry, few young girls are to be found there. The younger girls are far less tolerant of disagreeable conditions than the older ones.

The other processes involved in the steam laundry require more or less skill and speed. It is here that the girls and young women are found. The fingers that fold and tie up the piles of fresh linen must be deft and quick. The marking and sorting of the clothes must be done accurately. The handling of the different machines which press the collars, shirts and other articles of clothing requires strength and skill. These positions pay comparatively fair wages and naturally attract a higher type of worker than the unskilled, poorly paid work of the mangle room.

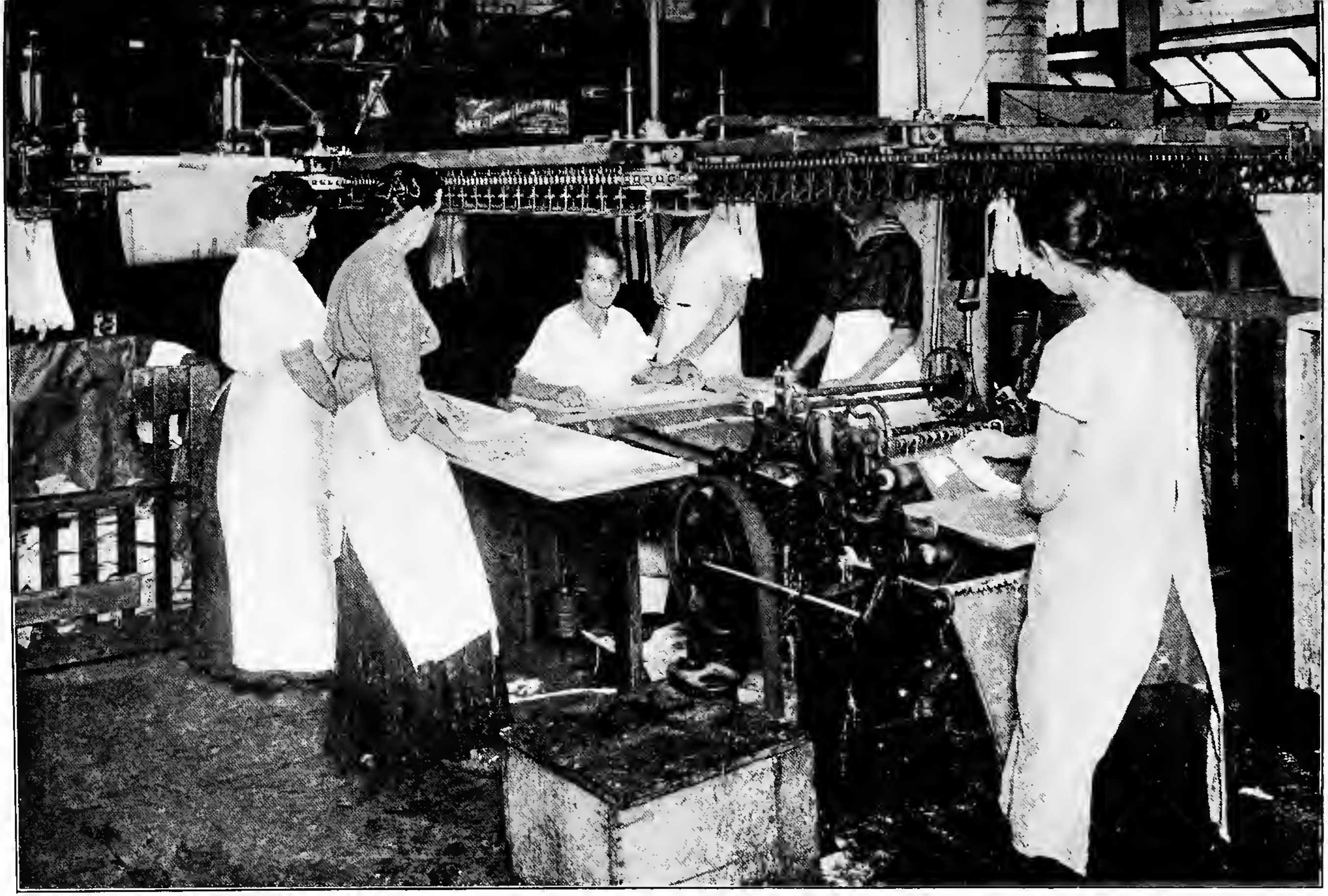


Nationality of Women Employed in Laundries

Nationality.

The majority of women employed in laundries are American born. Irish women come next in number and then Italian. Most of the other European nations have a few representatives, but they make up only 9% of the whole group.

In the best managed and best equipped laundries, there are many intelligent and able women. Workers will come from a distance to fill the positions offered and various nationalities are represented. But the ordinary small flat-work laundry draws its workers mostly from the immediate neighborhood. They are often girls of little ambition who drift into the laundry because it is there, it is easy to get a job, and if they stay home a day or two now and then, the manager will probably take



Starching Department.

them on again. There is nothing to attract workers who live in another part of the city, unless they happen to be old employees who have moved away. In this way laundries are apt to reflect very closely the character of the neighborhood in which they are situated. A great many are located in the Irish American section of the city and a great number of others in the Italian districts. This accounts for the prevalence of these three groups among the women workers.

Home and Living Conditions.

By far the greater number of women interviewed were living at home with their own families. A few lived with other relatives or friends and only twenty-six of the whole number lived alone. Usually the homes of these women are near their places of work, in the crowded tenement districts of the city. Occasionally one finds an attractive apartment or even a small house, well situated and comfortably furnished with a pleasant, homelike atmosphere. The girl who is getting fair pay, or whose wage is merely a welcome addition to the family income, is apt to have a home in the real sense of the word. But too often conditions are such as to defy all attempts at comfort and wholesomeness.

One family visited in the course of the investigation lived in three tiny rooms in a west side tenement. They were on the top floor and had plenty of light and air, and the place was spotlessly clean but four people slept in one bed. In another family, six people occupied one small bedroom, though the grandmother assured the investigator that they were not crowded because the baby took up so little room.

Dark, inside bedrooms, with no direct opening to the outer air, and toilets used in common with one or more families were very numerous. Many of the tenements were old and in bad repair, with broken, dirty toilets in the halls. In one house, the family visited were holding an indignation meeting at the front door with some of the other tenants, because the cellar and ground floor were flooded every time it rained. The landlady also came in just at that moment and was very indignant at the criticism of her house.

Poor pay and poor living conditions go hand in hand. To live in a decent neighborhood, in a comfortable, proper home, costs more than the majority of the women employed in laundries are receiving for their work.

Family.

A little more than one-half of the workers were single women, 25% were married, and the rest were widowed or separated from their husbands. The wage of the married women with families must of course go toward the support of the family; the woman without relatives or friends must shift for herself as best she can; and the unmarried girl who lives at home with her parents must turn her earnings into the family exchequer. Her wages are depended upon to keep the home together in a great many cases. Employers have been known to pay a girl less when she lives at home, but as a matter of fact this girl needs a living wage quite as much as if she lived alone. When questioned as to the disposition of their earnings, the girls almost invariably answered, "Why, I turn everything in to my mother, of course," as if there could be no other possibility.

Recreation.

The girl working in a laundry is almost unknown to settlements and clubs. The Young Women's Christian Association is in touch with a number of these girls, but this is the only organization to which they were known. For most of the girls, movies are the main source of amusement. At the movies you can just sit and rest after a long day on your feet, and you are not called on to make any effort. There seems to be absolutely no social life or outside interests for most of the girls—no opportunity to make new friends or know anything beyond the limits of laundry and home. They are often too tired after the day's work to do anything but eat their supper and go to bed, and most of them show no desire for anything different.

Education.

The women employed in laundries, like many other unskilled or semi-skilled workers, have for the most part received only the minimum of education required by law, or even less. Thirteen of the 349 women who gave their school history, reported that they had had no schooling whatever. Of the others, the majority left school at the age of fourteen or under, two were high school graduates, and only 25 of the whole number had graduated from the grammar grades of the public or parochial schools.

Some of these girls left school as soon as they could because they were frankly tired of lessons. Others were needed at home to care for younger brothers and sisters, or because of illness in the family. Usually, however, economic necessity is the reason for cutting short their school days. Their earnings are a necessary part of the family income, and they must go to work as soon as the law releases them. This, of course, puts trade training along some one line out of the question, and the work in a laundry is not calculated to stimulate ambition for further education. Only one of the workers interviewed made use of the night schools of the city, either because there was nothing in their lives to make them want a wider outlook, or because their work took so much of their strength and vitality that they were not equal to further effort.

Previous Occupation.

More than two-thirds of the women interviewed had tried other kinds of work before drifting into the laundry. Thirty per cent had been employed at some sort of factory work, thirty per cent had been in domestic service, and a few had worked in stores. Their accounts of constantly shifting from one job to another, often staying only a few weeks, or even days, in one position, showed in many cases the inability to concentrate and really learn a trade, and the spirit of irresponsibility that goes hand in hand with ignorance and lack of ambition.

Opportunity.

The ambitious young girl just setting out on her career as a wage-earner, usually strays into a blind alley when she enters the laundry. There are of course a few positions of interest and responsibility, where the work is really of high grade, such as that of forewoman and work in the marking and sorting department. The ordinary work of a laundry is not apt to draw out and develop latent powers. It is wearing, it is monotonous, it affords little opportunity for advancement. It is work that must be done, however, and the strain might easily be relieved and the monotony lessened by introducing more science into the running of the business.

To sum up, frequently the laundry worker is a woman of little education, ambition or skill. Her life has been hard from babyhood, her work is a drain upon her strength, she is poorly paid, there is little incentive anywhere in her life toward a broader outlook or deeper satisfaction. Her working environment should therefore be made as healthful and comfortable as possible, that she may have every opportunity for health and strength both for her own sake and for the sake of the children, who are growing up to take their place as American citizens.

RELATION OF WORK TO HEALTH OF WORKER.*

Markers and Sorters.

The health conditions that stand out in the group of markers and sorters actively at work, of whom thirty-seven were examined, are given below. The difficulties in producing a study which will show a picture of conditions observed at a single examination should be borne in mind, in order to better appreciate this and the following analysis of diseases. These difficulties were mentioned in some detail in the introductory pages to this report. (See page 4).

Tuberculosis.

Tuberculosis seems more prevalent among sorters than among any other group of workers. Their intimate contact with soiled and contaminated bed linen, handkerchiefs and clothing would lead one to expect a greater liability to this disease. Five cases (13.5%) of tuberculosis were noted among the 37 sorters examined, and also one additional case of suspected tuberculosis, making, if combined, a total of 16.2%.

The wash room workers showed the second largest number of cases among the various groups of laundry workers examined. There were also three markers and sorters who suffered from acute bronchitis. Two sorters in whom the tuberculous process was not active, were working in an atmosphere which exposed them particularly to a lighting up or reawakening of the old tuberculous process.

Nose and Throat Conditions.

While it is true that abnormal conditions of the nose and throat are widely prevalent among city dwellers, an unusually high prevalence was noted among the markers. Pathological conditions of the nose and throat were found in 31 or 84% of the markers, 19 of these complaining that they experienced various degrees of suffering as a result of this condition.

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*For conditions of work in different processes see section—"At Work in a Laundry."

In all other groups of laundry workers combined, only 64½% were found similarly affected.

The large quantities of dust encountered in this work, which is in no small measure due to the unwarranted practice of throwing pieces of soiled linen about, is probably responsible for this.

Conjunctivitis.

Eight persons (20%) of the markers and sorters suffered from fairly marked inflammatory conditions of the eyes, namely conjunctivitis and trachoma. This was a larger number than that encountered among any other group of laundry workers except machine operators.

Skin Conditions.

Three of the markers were suffering from eczema. One would not expect that this group of workers would suffer much from this condition since they are not very much exposed to moisture and skin irritants.

Flat Foot.

The largest number of persons suffering from flat foot was found among the markers and sorters, twelve cases being recorded in this group. The next largest number was found among the workers at the flat work ironing machine. These two groups which comprise the workers who remain standing almost continually on one spot, show this condition in 28½ per cent, and only 17½ per cent of the total number of laundry workers examined in the course of this study suffered from this condition.

Varicose Veins.

Varicose veins were found in 22½ per cent of markers, whereas in the total number of workers examined 26½ per cent showed this condition.

Vision.

Despite the fact that workers in this group tax their sight more severely than the others, they seem to suffer from no marked amount of visual defects. Sixty-nine per cent of all the workers examined, had defective vision as tested by the Snellen test card, whereas, among markers and sorters 74 per cent were similarly affected. The importance of good light is so generally recognized that markers and sorters are permitted to occupy the best lighted parts of the establishment.

Contagious Diseases.

Sixty workers in all were questioned as to their history with respect to contagious disease contracted after entering upon laundry work, especial attention being given to the history of typhoid fever, diptheria and trachoma. Three cases of typhoid fever, one of diptheria and three of trachoma were contracted in the course of the work. Two of the cases of trachoma were in an actively infectious stage of the disease at the time of this study. Of the sixty who were particularly questioned with respect to contagious disease, 22 were markers and sorters, and among these the following histories were obtained:

Two cases of typhoid fever, one of diptheria and two of trachoma were reported by this group, as having developed in the course of work.

The history obtained from these workers with respect to attacks of tonsillitis was not sufficiently clear-cut to merit inclusion in this report. Sufficient evidence, however, was obtained to indicate that there is a great likelihood that markers and sorters as a class are exposed to a variety of infectious diseases. It is manifestly impossible to give a census of such diseases, unless we copy a page from the laws of continental European countries and England in particular, and insist upon the recording in a book kept on the factory premises, of every case of disease contracted by employees in the course of work. The marker and sorter who contracts any of these contagious diseases is a possible menace to those members of the community who are served by the respective laundries, and who may use linen and other laundered work which has been contaminated by the hands of such markers and sorters who frequently go from soiled clothes to those that are clean.

Wash Room Workers.

Forty-five men employed in the wash room were examined as a part of this study.

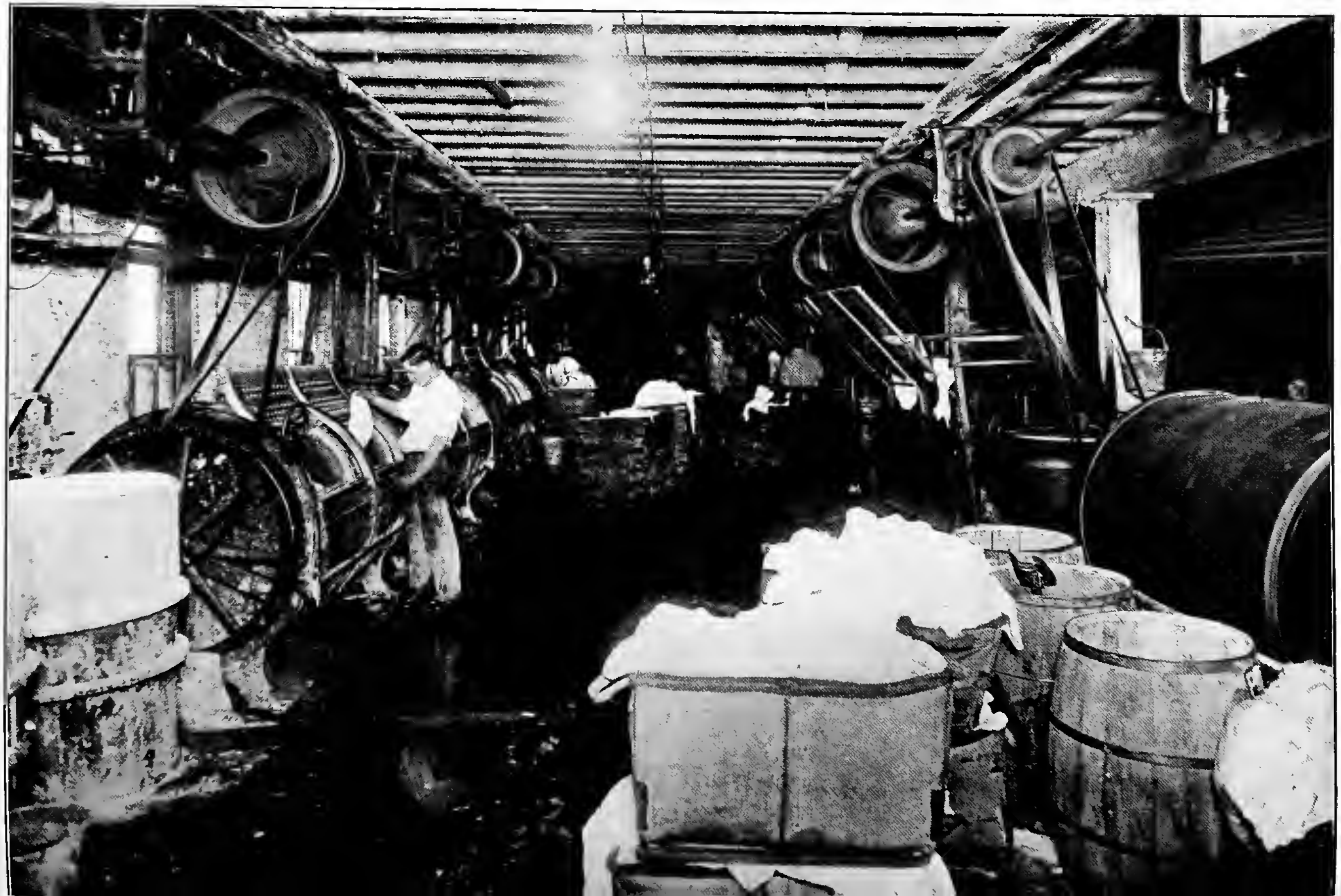
Thirty-five or nearly three-quarters of the 45 men were foreign-born and uneducated, the type of worker who fails to recognize the first sign of sickness and who lacks appreciation of the dangers of his environment. They must earn a living in some way, and they therefore accept insanitary conditions as the natural and inevitable accompaniment of their work. The following general conditions were found among them:

Tuberculcsis.

Four cases of tuberculosis were found in this group, two of them cases with positive sputum. In addition, there were two cases of suspected tuberculosis, bringing the total of active and suspected tuberculosis up to 13.5. There was also found among these employees one case of chronic adhesive pleurisy, one of resolving pneumonia, and four of chronic bronchitis. In other words, twelve or 26.6% of 45 employees in this branch of laundry work had some form of pulmonary disease.

Heart Conditions.

Five of this group had fairly marked enlargement of the heart without murmurs, the blood pressure being abnormally low in each of them and the heart sounds of poor quality. They were the men who constantly lifted nets of considerable weight. One other worker had no enlargement of the heart but the sounds were poor, blood pressure abnormally low, and he was apparently suffering from poor muscular tone. The average systolic blood pressure among 45 men was 121, and of these 13 had a



systolic pressure below 115 and only two of these were above 150. The average age of men in this group was 34 years for washers, and 28.8 for helpers. Five of the men gave a history of excessive use of alcohol.

Rheumatism.

A history of rheumatism was obtained in 12 of the 45 persons examined. Their exposure to excessive moisture led us to question them closely with respect to this. Care was taken to exclude from our count those cases in which the pain might be held to be due to flat foot.

Skin.

Many writers have called attention to a variety of dermatoses found in laundry workers. This has not been confirmed in our experience, and more particularly so in this group. A large number of employees among the various groups included in this study suffered from acne, but since this has no apparent bearing upon their occupation, they are excluded from further mention.

Fatigue.

Fatigue, as might be expected when one considers that they are continually employed in lifting very heavy weights during the day, is quite marked in this group of employees. Fourteen out of 27 who were closely quetioned on this point, stated that they went to bed almost directly after supper each night out of sheer exhaustion.

Shakers and Workers at Mangles.

The following disease conditions were noted among 28 flat work machine operatives and among 10 shakers:

Tuberculosis.

Among the 28 workers who were engaged on flat-work machines there were 4 cases of tuberculosis, two of them clinically active. Attention is deserved by the fact that in numbers of instances those who are suffering from an active tubercular process continue at work constituting in many instances not only a menace to the workers about them but also causing the progress of the disease to become greatly accelerated.

Among the ten shakers and folders, no cases of tuberculosis were found. The long hours of work, exposure to hot damp atmosphere, and the effects of low wages, combine, no doubt, to increase the susceptibility of this group of workers to tuberculosis.

Heart Conditions.

Three cases of mitral regurgitation and one other case in which the aortic regurgitation was combined with mitral regurgitation were found among the 28 flat work ironers included in this group. Among the ten shakers there was also one case of aortic regurgitation and one case of chronic myocarditis.

Blood Pressure.

The blood pressure in this group as a whole was very low, the average being 113 systolic. Nine of the 28 flat-work employees had an average systolic blood pressure of less than 108 and only one, an elderly woman, had a pressure of over 150.

Anaemia.

Among the shakers, in particular, the largest percentage of cases of marked anaemia was found.

Varicose Veins.

Of the ten shakers seven had extremely marked varicose veins of the legs. However, this condition in view of the average age and history, must in no small measure be ascribed to other than industrial causes.

Flat Foot.

The second largest number of victims of flat foot encountered among the laundry workers was found in this group, and the symptoms were of sufficient severity to cause a marked disability. There were ten cases among the 38 persons in the entire group.

Nose and Throat Conditions.

Twenty-one of the 28 flat work machine operators or 78.5% were found to present a marked hypertrophic rhinitis, chronic pharyngitis or other nose and throat abnormality. It may be recalled in this connection among all laundry workers examined in the course of this study, 64% were found to suffer from this condition, indicating that conditions in this work were even more conducive to nose and throat disorders than any other departments of the laundry industry.

Starchers.

Only 13 of the women who are known as starchers were examined. In those handling hot starch, the sodden condition of the hands was noticed. The number examined was too small to form a basis for critical discussion. The results of the examinations may be found in the chart at the end of the report. (See page 90).

Collar Girls.

Sixteen girls in the collar department were examined and the following physical abnormalities noted:

Vision.

Seven out of eight had markedly defective vision; 8 of the group were not examined with respect to visual acuity. Apparently this type of work constitutes an unduly severe ocular strain.

Menstruation.

Eight of the sixteen girls suffered from dysmenorrhea, due apparently to constant standing. Two others who were likewise affected, attributed their condition in part to other causes. The requirements of this particular work are not of such a character as to make it essential for these girls to be compelled to stand while at work, and the necessity of providing proper seats would seem here to be urgently indicated. It can be confidently asserted that three-quarters of the work, at least, may be done while in a sitting position.

Anaemia.

Anaemia was found markedly prevalent in this group of girls, six out of sixteen showing this condition, both upon inspection of the visible mucous membranes and according to the Tallquist scale. In other words, in this group anaemia was found among 37.5%, whereas in the laundry workers, as a class, it was found in only 20%.

Fatigue.

Fatigue was complained of by practically every one of the girls. Next to the flat work machine operatives, they seemed to require the longest number of hours of sleep in order to overcome the fatigue of the preceding day's work. The average number of hours of sleep in this group was 8.65. General muscular weakness and tremors were fairly frequent in this group. Three of the sixteen had pulse rates of over 96 per minute without any demonstrable evidence of thyroid gland involvement or other apparent cause of tachycardia.

Shirt Machine Operators.

Fifty-one machine operators were examined. Nineteen of these, 3 men and 16 women, were body machine operators and were separated from the others because of the heavier work which they do. Thirty-two, all of them women, were operators on other types of machines. These workers were examined with much care because of the previous studies that have been made upon similar groups by others. They are workers that stay in one laundry a long time, probably because their field is limited. The body machine operators examined had served an average of 4.17 years in the laundry where they were interviewed.

The following physical conditions were found among these workers:

Menstruation.

Menstruation was found abnormal (profuse, of too long duration, too frequent, or very painful), and apparently due to laundry work in six of the sixteen body-machine operators questioned. Five of the whole number could not be satisfactorily quizzed because they were foreign and naturally uncomplaining. Among 32 other machine operators, 10 had abnormal menstruation due to laundry work, and 3 partly due to laundry work. Anywhere from 31% to 40% of the number had abnormal menstruation due to laundry work. Among all groups of workers the average of abnormal menstruation due to laundry work was 37%, 14% having abnormal menstruation due to other causes, and 49% claiming normal menstruation. These facts seem to indicate that machine operators, as well as workers in other parts of the laundry, suffer to a considerable degree from menstrual disorders due to their occupation.

Flat Foot.

Flat foot of sufficient severity to produce subjective symptoms was found in but two of the 17 body-machine operators, (9 of these were not satisfactorily examined). Among other machine operators, 6 cases out of 25 were found. This was less than the amount found in markers and sorters and in other workers, showing that treadle work had less effect upon the arches of the feet than steady standing in one spot.

Blood Pressure.

Blood pressure among this group of workers was the lowest of all. Machine operators averaged 109 systolic pressure, and 14 out of 32 (43%) below 108. Among 19 body-machine operators, an average systolic blood pressure of 111 was found, while 11 of them (58%) were below 108. Fatigue among the body-machine operators was noticeable, 7 of the 15 who were questioned reporting that they regularly went to bed at 9 P. M. or before.

General Statement of Health Conditions.

The medical examinations of the 141 women and 68 men in the laundries are summarized in the following statement:

Fatigue.

Sixty or 28.7% of the workers complained of undue fatigue. The information obtained from each worker as to the number of hours of rest per night was highly significant, and vividly reflected their condition of exhaustion. Forty-eight, or 32.8% of these workers went to bed at 9 P. M. or before, and of these one-third went to bed before 8.30. Their subnormal condition was not due to loss of sleep, since only 9 of the 60 had less than an average of 8 hours sleep per night. Among the 60 workers who complained of excessive fatigue, 25 had fallen arches, and 8 suffered from some other condition which might account for it, such as tuberculosis or heart disease; but in 18 cases we could find no explanation of the fatigue except the work itself. Poor home conditions may have been a contributing cause of fatigue and lowered vitality also, but in none of these cases so far as we ascertained were the home conditions alone such as to account for the worker's depressed condition.

We are not prepared to affirm that a low blood pressure is clinical evidence of fatigue; we recognize that it may be due to excessive heat or humidity or other environmental, or even constitutional conditions. However, it may not be without significance as an indication of fatigue and is extremely suggestive. Among all the workers examined, 64 or 31.6% had a blood pressure lower than normal; 15 males were below 115, and 49 females below 108 systolic. Only 2, or 1% had a blood pressure above normal, and one of these was 54 years of age when heightened pressure is to be expected.

Clinical findings which were by no means infrequent, which might also be considered as evidence of too-long sustained muscular exertion, were coarse tremors and twitchings, in association with heightened reflexes, as well as an increased pulse rate, in 35 or 17.3% of the workers who had no signs of hyperthyroidism.

Tuberculosis.

A relatively large amount of tuberculosis was found among the workers. There were definitely diagnosed 9 active and 7 inactive cases, a total of 16 out of 202 or 7.92%. Adding to this, 4 suspected cases, the total was 20 or 9.9%. There were also 5 cases of acute bronchitis and 2 cases of chronic bronchitis,—one old pleurisy, and one resolving pneumonia,—bringing the number of pulmonary conditions up to 29 or 14.7%. Each of these cases was examined and the diagnosis concurred in by two physicians. Sputum specimens were obtained in 17 cases, 1 of which was positive, and 16 negative. The remaining cases refused sputum. It was impossible to observe the cases further because the laundries could not spare the time of their employees for repeated examinations, and because the workers could not attend our day clinics. Comparison of these figures with any general tuberculosis rate is difficult but some indication of the undue prevalence of the disease may be obtained by comparison with the rate of 1% among the National Guard, as well as for those who were sent to various cantonments as a result of the selective draft.

Skin Diseases.

Among the 202 workers examined, there were 55 cases (27.2%) of pathological skin conditions. They may be grouped as follows: 34 acne; 4 eczema; 4 seborrhea cappitis (marked); 3 tinea versicolor; 1 psoriasis; 1 urticaria; 2 herpes; 2 suspected syphilitic eruptions; 2 cases of marked cyanosis, and 2 of vaso motor irritability. These findings reveal nothing unusual and therefore do not confirm the statements of some other writers, especially in regard to wash room workers.

Flat Foot.

A condition of flat foot of sufficient severity to give rise to subjective symptoms, was found in 35 or 17½% of the cases; as before noted, the greatest number being among those who stand steadily in one spot. Five complained of symptoms, but in these no falling of the arch was detected. Upon examination 45 others were found to have fallen arches but had no subjective complaints. Thus almost 50% were suffering from flat foot.

Varicose Veins.

Varicose veins were found in 54 or 26.7% of these workers, 26 in a slight degree, 18 in a moderate degree, and 10 marked. This is particularly common among those who must stand for long periods daily.

Menstruation.

Abnormal menstruation is apparently more the result of standing than of treadle work. The women who stand at machine operating show a high percentage but not higher than those who stand to do marking. Among the girls questioned, 55 or 49% had normal menstruation, 42 or 37% had abnormal menstruation probably due to laundry work, and 16 or 14% had abnormal menstruation probably due to other causes.

Miscarriages.

The question of miscarriages, among the laundry workers, was carefully studied. Among 33 married and 12 widowed women, 19 had suffered miscarriages. Twelve of these had not been due to laundry work, 3 were distinctly, and 3 probably due to the work they had been doing in the laundry. This gives a total of 6 or 31.6% of workers who had suffered miscarriages probably due to laundry work.

Syphilis.

Syphilis was definitely diagnosed in 1 case and strongly suspected in 2. Fourteen Wassermann tests were made. Twelve were negative, one 1+, and one doubtful. These tests were made whenever possible, when a history of miscarriage was given.

Heart.

Pathological cardiac conditions were found in 22 cases or 10.8% of the workers examined. There were 9 cases of leaking valves—seven had mitral regurgitation, one had mitral and aortic regurgitation, and one, aortic regurgitation. There were also 5 who had dilated hearts; and 2 weakened cardiac muscles. Four had impurities of the mitral systolic sound, which, together with other symptoms, were apparently the result of myocardial defects. One had an anaemic murmur and one was distinctly a case of over-active heart.

The following table shows the ages of 16 persons having organic heart disease:

Age	Cases
15-20	3
20-25	3
25-30	0
30-35	5
35-40	1
40-45	0
45-50	0
50-55	3
55-60	0
60-65	1

Arteries.

Fifty-seven cases of thickened arteries were found, 28.2% of the number examined. Forty-four of the cases were slight, 12 moderate and 2 marked.

Enlarged Glands.

Glandular enlargement was noted in 49 cases; cervical 23; thyroid 9; epitrochlear 4; axillary 2; inguinal 3; and submaxilliary 6; general 2.

Abdominal Conditions.

Abnormal abdominal conditions were noted in 15 or 7.9% of the workers. Nine were cases of general ptosis, 2 umbilical hernia, 3 inguinal hernia, 1 floating kidney.

Urine.

The urine was examined in 181 cases. Usually the examination took place in the laundry where facilities were poor and only a casual specimen could be obtained; microscopic examination could therefore rarely be made due to the lack of equipment. The urines were not filtered.

Nephritis was found in 1 case, diagnosis being based upon history, examination, and urine examination; both albumin and casts were present. Albumin alone was found in 6 cases or 3.31%; 2 of these had tuberculosis, 2 were alcoholic, 1 was a cardiac case, and 1 had thickened arteries. Five other cases, 4 women and 1 man, showed a slight trace of albumin without symptoms or signs of any serious disease. Only a single specimen was obtained from each individual. Sugar was found in one case only; this, and the history, lead to the diagnosis of diabetes.

Orthopedic Defects.

Forty-eight or 24.8% showed orthopedic defects. There were 32 cases of round shoulders; 1 of kyphosis; 3 of scoliosis; 1 of pigeon breast; 2 of healed tubercular hip joints; 1 of old infantile paralysis; and 4 of markedly deformed toes.

Eyes.

Vision was tested by the Snellen test type in 132 cases. Forty-one of these, or 31% were normal, 31 or 24% were slightly defective, and 60 of them or 45% were markedly defective. This gave a total of 69% with defective vision. Among the markers and sorters this percentage was 74.

Conditions other than defective vision affecting the eyes, were found in 27 or 12.9% of the cases,—markers and sorters as before noted showing a percentage of 20. Seventeen simple cases of conjunctivitis were found, 6 of granular conjunctivitis, 2 of trachoma, 1 of pterygium.

Nose and Throat.

One hundred and thirty-one or 64.5% showed pathological nose and throat conditions. (Hypertrophic rhinitis, deflected septum, chronic pharyngitis, diseased tonsils, singly or combined).

Mouth.

The condition of the mouth was carefully studied among the women, and somewhat so among the men. Of the 202 examined, 120 showed caries of the teeth; 57 showed tartar; and 28 gingivitis. Eighty-eight, or 43.5% had pyorrhoea, a condition which shows the great need of more general instruction in the care of the mouth.

Pediculosis Capitis.

A search for evidence of pediculosis capitis among 54 females revealed the presence of nits among 19 or 35.3%.

Personal Habits.

Fifteen of those questioned admitted that they used tea, and 9 coffee, excessively. Ninety-nine or 53% of them admitted the use of alcohol,—65 to a slight degree, 29 moderately, and 5 excessively. The largest number was found in the wash-room, where 96% of the men used it. The smallest number, 22%, was found among the shirt machine ironers.

SUMMARY.

We are now able to answer on a basis of scientifically ascertained facts the crucial questions which were raised in the Foreword of this report, namely, how far the health of the various classes of workers are affected by the industry.

(1) To what degree does the handling of soiled and variously contaminated linen communicate tuberculosis and various acute infectious diseases to the women, girls and men, who are employed in sorting and marking for identification this miscellaneous material?

Results of medical examinations leave no doubt of the high per cent of disease due to the special occupation. *Tuberculosis* is commoner in this group than in any other, being found in 16.2% including the suspected cases, while the general rate was 9.9%. *Pathological nose and throat conditions* were found in 84%—a rate considerably higher than that found in the entire number of laundry workers —being 64.5%. The prevalence of nose and throat troubles may justly be attributed to the dust and dirt shaken from the soiled and possibly contaminated garments. These impurities fill the air of the workroom and are inhaled by the workers.

One employee gave a history of having had typhoid fever before entering upon laundry work, and two contracted it while employed as markers. One worker was found cured of trachoma and one still had the disease at the time of examination. Both contracted it while employed as markers. One marker contracted diphtheria during his employment at this work.

The soiled clothes are dangerous to the marker. The latter, who sorts the clean as well as the soiled work may be a grave danger to the public, infecting the clean work either as a "carrier" of infectious disease, or through passing from dirty to clean work without properly cleansing the hands.

(2) How are men affected by working in an atmosphere heavily charged with steam, often wading ankle deep in the water that comes from the washing machines, and lifting heavy bags of water-soaked clothes from the washing-wheels?

Pathological pulmonary conditions were discovered in a high degree in the 45 men employed in the wash rooms. There were 3 active and 3 suspicious cases of tuberculosis, one old pleurisy, one resolving pneumonia and 3 bronchitis—a total of 11 out of 45 or 26⅔%. It is significant that the man with an incompletely resolved pneumonia was back at work before convalescence had been completed. This large percentage of pulmonary conditions is no doubt traceable to the exposure in the wash room where high humidity and temperature as well as cold draughts of air are encountered. In addition the wet floors make it impossible for the workers to keep their feet dry. The rheumatism rate among these workers was 25%.

Blood pressure showed an abnormally low average of 121, 13 of this group had a pressure below 115. The average age of the washers was 34 years and of the helpers was 27 years—(an age when a higher blood pressure would be expected).

The *heart conditions* also are indicative to some extent of the strain which the men undergo in lifting and carrying heavy nets and containers of chemicals. (Nets weighing 18 pounds dry, increase in weight up to 54 pounds when they are wet). Five cases of dilated heart were found in the group, all occurring in men who had been handling heavy nets.

Moreover two of the men suffering from *inguinal hernia* attributed their condition to the lifting of heavy weights, especially of the very large containers of lime.

(3) Are there any injurious effects resulting from the strain of long continued standing, of foot treadle work, of shaking out crumpled clothes, and other activ-

ities incident to this industry, upon the generative organs of female workers?

Menstruation is affected by occupations in which constant standing is required. Irregularities appear in the same groups that show a high percentage of flat foot. In 37% of the women menstruation was found to be abnormal, probably due to laundry work, and in 14% it was abnormal probably due to other causes aggravated by laundry work.

Nineteen of the 46 married women had suffered *miscarriages.* Three cases were distinctly and four probably due to the work being done by the women in the laundry.

There are two special risks which the women who work at the body ironing machines encounter. They often breathe air vitiated by the poison of carbon monoxide which is well known to be deleterious. They manipulate treadles with their feet by means of a jerky motion that is likely to cause injury to the female organs. It should be especially noted that the women who were examined in this inquiry had all been employed for upwards of four years. Obviously, they are the survivors of the industry. Women who had been at the machine for short periods and had not been able to stand the strain may have suffered serious physical injury before leaving. It is well known that only a muscularly strong woman can keep up this constant treadle motion which has been observed to run as high as 81 times per minute.* It is for this reason that the results of the physical examination of this class of active workers cannot be taken as conclusive evidence that no injury results from the occupation.

(4) Are there any other physical strains or health hazards peculiar to this industry?

Flat foot of sufficient severity to cause marked subjective symptoms found its largest number of victims among

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*Report of New York State Factory Investigating Commission 1912, p. 344.

Body Ironing Machine.

the markers and sorters, namely 30%. The next largest percentage was found at the flat work ironing machines, 28.5%. These two groups of workers stand at their work at the same spot without the relief of shifting their positions or walking even a few steps. The rate of all the workers suffering from flat foot was 17½%, 45 others were found to have fallen arches but were not conscious of any ill effects. This left 115, or slightly more than half, who apparently had good arches. This high percentage is important as it clearly appears to be characteristic of the occupation.

Varicose Veins occur in a large percentage, namely 26.7%. This condition cannot be attributed entirely to the strain of the work as the older women work in the laundries in larger numbers than in other factories. The occurrence of varicose veins is more general in the older age groups and especially among married women who have borne children.

There is no doubt that many of the older group of women are physically under par. The lowest haemoglobin count of all the workers was found among the shakers, their average being 72.7% by the Tallquist scale. But this *anaemic condition* is not confined to the shakers alone, it was found that the general percentage of anaemia was 20—an unusually high per cent in any industrial group. For example, of the 16 skilled collar machine operators, 6 showed a haemoglobin count at or below 70.

From our findings on *tuberculosis,* other *pulmonary conditions, heart conditions, anaemia, low blood pressure, uterine troubles and fatigue,* it seems probable that the atmosphere of the laundry is responsible for much of the ill-health found among the workers.

The effects of humidity and heat on the health of the workers are discussed in some length in the Monograph "Occupations" by Oliver. He says "at 75° wet bulb, the temperature of the body begins to rise and this may continue until heat stroke results. When the wet bulb registers above 75°, it is generally held that danger begins. A moderately warm moist temperature endured for a whole day is far more dangerous than a marked condition of high temperature and moisture endured for a short time.'' He points out that the warm moist atmosphere in the factory produces a condition of low blood pressure of anaemia and fatigue.

Arlidge, in ''Diseases of Occupation'', says ''the atmosphere in laundries produces much tuberculosis, bronchitis and heart disease, anaemia and uterine troubles; 2.5% of the females admitted to the Brompton Consumption Hospital in 1891, taking patients from all parts of England, were laundresses.''

Hayhurst, in the ''Report from the State of Ohio,'' says ''in 1911 and 1912, 35 out of the 149, or 23% of the deaths among laundresses were due to tuberculosis, while other indoor occupations gave an average of 13.3%, and outdoor workers an average of 7%.''

(5) What effect do hours, wages, etc., have upon the health of the worker?

An outstanding feature of the study of the laundry industry is that both men and women work long hours for three or four days a week and then there is a let-up for the remaining days of the week. The physical examinations proved that these long days often strain the health and vitality of the worker beyond the power of recovery during the shorter days. Testimony in all industries studied, both officially and unofficially, has proven that with the shorter work-day employment tends to become more regular. The fact that hours in a laundry on some days of the week are excessively long and other days short, undoubtedly contributes to the large labor turn-over to be found in laundries.

The responsibility of reducing the number of hours per day in laundries rests in part upon the public. A few laundries have developed a system of routes in the collecting of clothes, which distributes the work evenly throughout the week. Clothes from one section of the city are collected on Monday, from another section on Tuesday, and so on through the six days of the week. A similar system of delivery has been devised. This has resulted in an even distribution of work and hours for those engaged in each of the processes involved in laundry work.

The success of such a system of collection depends very largely on the cooperation of the laundry's patrons. Much remains to be done in educating the public to realize that by requiring all washes to be returned on Friday or Saturday, it puts a great burden upon the laundries and causes much overwork. Regularity in returning the week's wash on some other day ought to be accepted as equally satisfactory to laundry patrons and would help solve the present problem of poor distribution of work now found in many establishments.

The cause for the long hours found for both men and women in many of the laundries is simply mismanagement on the part of the employer who carries on his business in a hit and miss way. The question of doing work on very short notice for hotels, steamers and even the public presents a very complex problem as far as the hours of the workers are concerned, but it should be met by an enlightened management and placed on a scientific basis. It is a well known fact that decreasing the work day from 10 to 9 hours or even to 8 hours when the work is hand work will increase the output. This would, undoubtedly, be true in laundries where work is done under great pressure and often under unhealthy and unsanitary conditions. Would not further legal curtailment of hours for both men and women lead to new scrutiny of methods and organization?

There is no better index to the kind of home which a worker can afford than the wages she earns. The large proportion of laundry workers earning less than a living wage explains the overcrowding of their homes, the general poverty and the cramped and struggling lives which they lead. The environment of these workers does not differ essentially from that of unskilled and some skilled workers of their class in other occupations. Life in New York City tenements in general is characterized by overcrowding per room and per apartment, by dark unventilated bedrooms and by insufficient food. This summarizes the home influences of the laundry women who were visited, except for the small proportion of more highly skilled workers who receive higher wages and can afford to live in better homes.

It is difficult to differentiate between bad home and bad working conditions and to assign to each the exact share it contributes in causing ill health. It is, however, clear that the low wages paid to a large majority of the workers make decent and wholesome living impossible. In so far as the industry itself causes this prevailing low standard of living, it is responsible also for the resulting deterioration of health.

Few industries show more clearly than this one the need for minimum wage legislation in New York State. Not only is the industry a pathetic illustration of the low wages which employees will receive when no minimum is set, but also it is a vivid example of an industry in which there is need of some stimulus which will force employers at the bottom of the scale to introduce more efficient methods of management into their business.

RECOMMENDATIONS.

In view of evidence secured in the course of this study, the Division of Industrial Hygiene of the Bureau of Preventable Diseases of the Department of Health and the Consumers' League of New York City make the following recommendations:

Recommendations for Special Departments.

Marking and Sorting Department.

1. All scattering of dust should be avoided. Therefore, dirty clothes should never be dropped down a chute, be thrown about, nor even touch the floor.

2. Proper means for removing dust from the atmosphere should be installed.

3. Marking should be done over a table which has a suction device under it, to draw the dust away from the worker.

4. An all-over working dress and cap should be provided for each marker.

5. Proper washing facilities,—hot and cold running water, hand brushes, soap, and individual towels—should be provided by the employer, in close proximity to this department.

6. Lights should be adequate and well shaded.

7. A seat should be provided for every worker at work.

Wash Room.

1. No wash room should be located below the level of the street.

2. Wash rooms should be adequately ventilated.

3. Steam should not be allowed to escape unnecessarily into the work room, by leaving open wash-wheels, by leaking wheels.

4. Floors should be kept *dry* by the proper drainage of wheels and extractors, by keeping the wheels closed and by the use of water-tight trucks and proper fitting trays.

5. Proper lockers should be provided for the street clothing of workers.

6. Proper washing facilities, consisting of shower bath and troughs, with hot and cold running water, hand brushes, soap, individual towels, and dressing rooms should be provided.

7. Floors should be kept in repair and properly constructed, graded and drained.

8. Extractors should be so guarded that their covers must be in place while the machine is in operation.

9. All machinery should be guarded.

Flat Work Department.

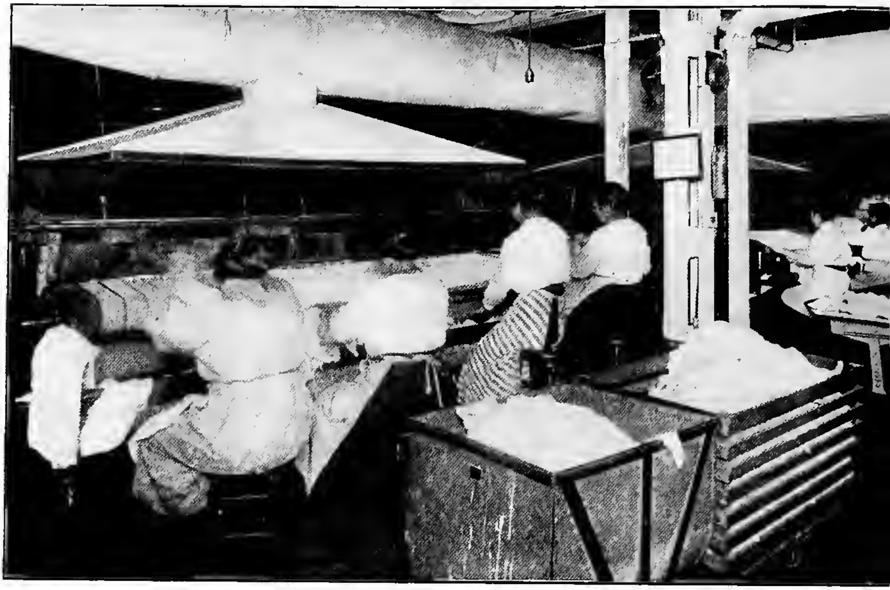
1. All flat work should be "tumbled" and not shaken by hand.

2. Wet clothes should be spread on frames and slid along—never carried by the workers.

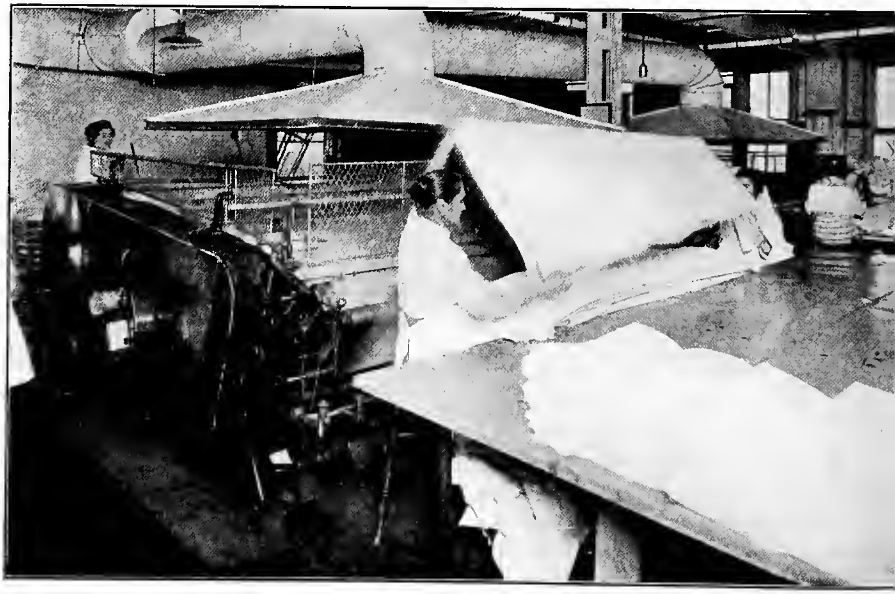
3. Proper seats and tables should be provided for all feeders and takers-off to use while at work.

4. Excess heat and humidity should be removed by proper hoods and exhausts.

FLAT WORK DEPARTMENT IN WHICH ALL WORKERS ARE SEATED



"FEEDERS"



"TAKERS-OFF"

Starching Department.

1. It is urged that cold starch be used instead of hot starch.

2. Every drying room should be properly enclosed to prevent loss of heat.

3. Chairs should be provided for all workers.

Collar Department.

1. Seats should be provided for all workers.

Machine Ironing Department.

1. A convenient way of passing articles from one worker to another, should be provided.

2. Excess heat and dangerous gases should be removed by exhausts, asbestos coverings on heated pipes.

3. Machines should have low treadles, operated by air pressure.

4. A chair should be placed conveniently for the use of each operator, during slack moments.

General Recommendations.

1. Workers handling clean clothes should be compelled to thoroughly cleanse their hands after use of toilet facilities.

2. Seats should be provided for all workers either at work or during lunch period.

3. Lunch rooms should be provided.

4. The floor throughout the laundry, except in the wash room, should not be constructed of hard unyielding material.

5. The working day should be limited to eight hours.

6. At least four legal holidays should be observed.

7. During the summer season, at least, a Saturday half holiday should be enforced.

8. The custom of granting vacations with pay should be universally established.

9. Every worker should be paid a wage sufficient to meet the necessities of life—to maintain health and efficiency.

APPENDIX I.

NAME * O'Sullivan, Maggie

ADDRESS 762 West 56th St.

OCCUPATION Feeder

* NAME OF LAUNDRY Alert

ADDRESS 637 West 53rd St. floor

DISTANCE FROM HOME v 5 min. walk:ride:time

AGE 53 CONJ. COND. v S. M. W. D. Des. Ireland Birthplace 41 Yrs. in U. S. 41 Yrs. in N. Y. C.

LIVING AT HOME children With whom

LIVING AT PLACE OF EMPLOYMENT

LIVING DETACHED With whom How Expenses

DISPOSITION OF EARNINGS entire wage Contribution to family budget 0 Daily carfare 15¢ Daily lunch 0 Money saved yearly

CHURCH AFFILIATION Roman Catholic

CLUB OR CLASS MEMBERSHIP 0 Where: Subject

EDUCATION 5 Age at entering school 12 Age at leaving ? Grade To help at home Reason for leaving

WORK RECORD 20 yrs. How long at work 10 yrs. In this trade 10 yrs. In present occupation

Other occupations in this trade and length of time in each

domestic service - 10 yrs. Occupations other than in this trade and length of time in each

RECREATION 0 Out-door exercise 0 Gym 0 Shows Bed How are evenings spent

OTHER MEMBERS OF FAMILY	AGE	OCCUPATION	WAGE
Margaret	27	piano factory	$9.
John	17	out of work	
Francis	13	school	
Eleanor	11	school	

INCOME FROM OTHER SOURCES 0

HOME CONDITIONS ten. Type of building fair Condition untidy Condition of home 3 No. rooms $12.50 Rent poor Light poor Ventilation

3 No. windows common toilet Special unsanitary features, 2 No. rooms used as bedrooms No.1 - 2 No.2 - 3 No. persons occupying each

HOURS.	Begin	End	Lunch	Supper	Total
Mon.	8	6	1hr		9
Tues.	8	6	1hr		9
Wed.	8	6	1hr		9
Thurs.	8	6	1hr		9
Fri.	8	6	1hr		9
Sat.	8	6	1hr		9
Sun.	0	0	0		0
Total					54

WEEKLY HRS. ACCORDING TO SCHEDULE 54

LENGTH OF LUNCH HR. ACCORDING TO SCHEDULE 1 hr.

HOW OFTEN DOES UNUSUAL OVERTIME OCCUR 3 times a week

TO WHAT EXTENT 2 hours a week

OVERTIME PAY no

CLOTHING Changed for work: no Condition: fair

SHOES Kind: carpet slippers Heels: 0 Condition: poor

SUNDAYS WORKED IN PAST YR. 2

HOLIDAYS OFF IN PAST YR. 3

REGULARITY OF WORK

				3 wks.		3 wks.
Time lost in last year due to slack season	Change of work	Vac. with pay	Without	Illness	Other	Total

WAGES $6.

Week work	Piece work: rate; weekly earnings	Fines

LUNCH

		v	work room
Home	Restaurant	Brought from home:	Where eaten

HANDLING OF SOILED CLOTHES

0			
Gloves	Cap	Apron	Washing facilities

OTHER LAUNDRIES WORKED IN Alford, Top-Notch, Never-fail, etc.

OPINION OF LAUNDRY WORK FOR WOMEN very hard and wearing

MARRIED FRIENDS FORMERLY LAUNDRY WORKERS *Mrs. John Leary, 690 West 57th St.

REMARKS: "I would never let my daughter work in a laundry and I wouldn't do it myself if I were young."

DATE Feb. 27, 1917 **INVESTIGATOR** M.N.A. **SOURCE OF INFORMATION** interview with worker

Worker's Schedule, Form 1.

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*Fictitious names used.

APPENDIX II.

SCHEDULE USED BY DEPARTMENT OF HEALTH.

OCCUPATIONAL HISTORY

Complaint **No.**

Name.. Age.......... M. F. S.M.W.

Address.. Fact. No.

	INDUSTRY	OCCUPATION	HOW LONG
1 Present	....	....	....
Previous	....	....	....

2 Description of Work. Hrs. of Work
Materials Handled

3 EXPOSED TO:
a) Extreme Heat or Cold Moisture
Chemicals Irritating Fumes Acids
Dust Filings Other Infectious Conditions
Portal of Entry
b) Strains: Muscular Postural Nervous
Eye Ear Gen'l Physical

4 PRESENT HISTORY: Special or Gen'l Complaint
Alcohol Syphilis Chewing { Gum / Tobacco
Protective Agents: Milk Masks Respirators
Clothing or Gloves Washing Lunch Eaten Where
Washing, etc. Ventilation

PREVIOUS HISTORY: Cough
Expectoration (blood?) Backache, etc.
Night Sweats Constipation
Loss of Weight or Strength
Pains in Chest
Pneumonia?
Pleurisy?
Asthma, Bronchitis?
Family History of Tuberculosis

6 Previous Occupational Disease?
Fellow Workers Affected

7 Home Condition: Character of Home
Work at Home Causes for Worry
Distance from Factory Transit Facilities
Bedrooms Windows Hrs. in Bed No. in Bedroom
Food: Kind Alcohol Disease in Family
Amt.
Tea Coffee Recreation Intelligence

Department of Health, City of New York, Preventable Diseases
855v

Additional History Obtained.

Marital History	Number of years married Number of children living Number of children dead (cause and age) Number of still-births (cause) Number of miscarriages (cause)
Birthplace	Number of years in the U. S.
Washing Facilities for Hands	Frequency Hot water supplied Soap supplied Towel supplied by employer Towel, individual or common
Clothing at Work	Cap, apron, overalls Shoes—condition, style of heels
Habits	Smoking—what and how much per day Alcohol—kind and how much per day Tea, coffee, milk, water (How many cups of each a day) Is a cup used in common
Menstrual History	Regularity of period Duration of period Amount of flow Degree of pain How long abnormal Are other women in the family affected the same way What is their occupation Leucorrhea

Examinee was questioned in detail as to the following:

1. Pains in any part of the body
2. Flat-foot
3. Swelling of legs and ankles
4. Rheumatism
5. Fatigue
6. Frequent colds of the nose, throat or chest.
7. Catarrh of the nose
8. Kidney
9. Hernia
10. Infection of the finger
11. Eyes.

Did you ever have typhoid, diptheria, trachoma, any contagious disease? When?

Examinee's Bedroom	Number of windows Windows kept open Number of people that sleep in the same room Examinee's bed time Examinee's rising time

Piece-work

Wages

Examinee's opinion of previous laundries in which he worked

Examinee's opinion of laundry work for men or women

PHYSICAL EXAMINATION DEFECTS

Diagnosis

Industry Firm

Examined by ....(Date)..

Borough

Address

General Appearance:

Development: Good. Fair. Poor. H't

Nourishment: W't

Facies:

Mucous Membranes: Lips
  Gums
  Eyes

Fingers: Cyanosis
  Clubbed
  Deformed

Skin: Color
  Eruption Ulcers

Eyes: Pupils Fundus O. D.
  O. S.

Teeth Tongue

Nose Ears A. D.

Throat A. S.

Lungs Sputum Expansion

Heart: Size
  Murmurs
  Blood Pressure

Pulse: Rate
  Regularity
  Artery Wall

Nerves: Reflexes Twitching Tremors

Muscular Strength: Rt. Lt.

Abdomen

Extremities Varicose Veins Flat-Foot

Glands Orthopedic

Blood: Hgb.
  Diff. Red and White Cells
  Wassermann

Urine Albumin Casts Sugar Lead, etc.

Remarks and Suggestions:

APPENDIX III.

TABLE 1.

Ages of Women Employed in Laundries, by Occupation.

Age	Shakers	Feeders	Takers-off	Folders and Tiers-up	Markers and Sorters	Shirt- and Body-Ironers	Collar Girls	Starchers	Fore-women	Miscel-laneous	Total at each age	
											No.	Per Cent.
14 and under 16 years	1	..	..	..	..	..	2	..	..	..	3	.7
16 and under 21 years	7	6	16	22	6	10	23	2	1	5	98	22.4
21 and under 30 years	6	11	15	32	24	27	17	16	7	1	156	35.6
30 and under 40 years	10	14	11	8	8	14	9	13	7	3	97	22.1
40 and under 50 years	15	15	7	1	2	2	2	5	2	4	55	12.6
50 and under 60 years	10	4	1	1	..	..	..	1	..	2	19	4.3
60 years and over	6	1	1	..	..	..	..	..	..	2	10	2.3
Total	55	51	51	64	40	53	53	37	17	17	438*	100.0

*Exclusive of 1 woman who did not report on this point.

TABLE 2.

Birthplace of Women Employed in Laundries, by Occupation.

Birthplace	Shakers	Feeders	Takers-off	Folders and Tiers	Markers and Sorters	Shirt- and Body-Ironers	Collar Girls	Starchers	Fore-women	Miscel-laneous	Total in each group	
											No.	Per cent.
United States	24	31	34	43	37	32	39	20	11	8	279	65.2
Ireland	21	7	7	3	1	6	4	6	3	4	62	14.5
Italy	3	4	3	13	..	8	6	7	1	2	47	11.0
Austria-Hungary	..	3	..	2	..	..	3	1	..	1	10	2.3
Great Britain	2	2	2	1	1	..	1	1	1	..	11	2.6
Norway and Sweden	..	..	2	..	..	..	..	..	..	1	3	.7
Russia	..	..	..	..	..	2	..	..	..	..	2	.5
Poland	..	1	..	..	..	..	..	1	..	..	2	.5
Germany	1	1	..	..	..	..	..	1	..	..	3	.7
France	..	..	..	..	..	..	..	..	..	1	1	.2
Miscellaneous	2	..	3	1	..	1	..	..	1	..	8	1.8
Total	53	49	51	63	39	49	53	37	17	17	428*	100.0

*Exclusive of 11 women who did not report on this point.

TABLE 3.

Actual Weekly Hours of Labor of Women Employed in Laundries, by Occupation.

Weekly Hours of Labor	Shakers	Feeders	Takers-off	Folders and Tiers	Markers and Sorters	Shirt- and Body-ironers	Collar girls	Starchers	Fore-women	Miscel-laneous	Total in each hour group
Under 48 hours....	..	..	3	..	3	11	15	8	3	..	43
48 and under 54 hr's	9	5	13	5	10	35	23	19	5	9	133
54 hours..........	23	26	14	31	19	7	4	4	5	5	138
Over 54 hours......	23	19	21	26	8	..	12	5	3	3	120
Total..........	55	50	51	62	40	53	54	36	16	17	434*

*Exclusive of 5 women who did not report on this point.

TABLE 4.

Comparison of Actual Weekly Hours of Labor with Scheduled Hours of Women Employed in Laundries.

Actual Weekly Hours of Labor	SCHEDULED WEEKLY HOURS OF LABOR.			
	Under 48 hours	48 and under 54 hours	54 hours	Total in each actual hour group
Under 48 hours.......	3	30	6	39
48 and under 54 h'rs..	7	28	97	132
54 hours..............	..	..	137	137
Over 54 hours........	1	3	115	119
Total.............	11	61	355	427*

*Exclusive of 12 women who did not report on this point.

Table 5.

Weekly Wages of Women Employed in Laundries, by Occupation.

Weekly Wage	Shakers	Feeders	Takers-off	Folders and Tiers	Markers and Sorters	Shirt- and Body-Ironers	Collar Girls	Starchers	Fore-women	Miscel-laneous	Total in each age group	
											No.	Per cent.
$4 and under $5	3	..	..	..	..	..	1	..	..	..	4	1.0
5 and under 6	20	2	4	2	..	..	2	1	..	..	31	7.4
6 and under 7	18	12	26	6	2	1	6	..	..	4	75	18.0
7 and under 8	4	24	12	16	4	5	14	3	2	3	87	20.9
8 and under 9	3	6	5	20	6	14	20	3	2	1	80	19.2
9 and under 10	..	5	2	7	5	6	7	10	1	6	49	11.8
10 and under 12	2	..	1	5	11	11	2	17	2	3	54	12.9
12 and under 15	..	..	..	6	4	7	1	3	7	..	28	6.7
15 and under 20	..	1	..	1	2	2	..	..	2	..	8	1.9
20 and under 25	..	..	..	..	..	..	..	..	1	..	1	.2
Total	50	50	50	63	34	46	53	37	17	17	417*	100.0

*Exclusive of 22 women who did not report on this point.

Table 6.

Weekly Wages of Women Employed in Laundries, by Conjugal Condition.

Weekly Wage	Single	Married	Widowed	Deserted, Divorced or Separated	Total in each wage group
$4 and under $5	3	1	..	..	4
5 and under 6	9	11	7	4	31
6 and under 7	26	25	18	6	75
7 and under 8	46	22	15	4	87
8 and under 9	52	13	9	5	79
9 and under 10	31	10	3	5	49
10 and under 12	29	12	6	7	54
12 and under 15	18	7	3	..	28
15 and under 20	6	..	2	..	8
20 and over..............	1	..	..	..	1
Total................	221	101	63	31	416*

*Exclusive of 23 women who did not report on this point.

Table 7.

Weekly Wages of Women Employed in Laundries, by Living Condition.

Weekly Wage	Living with			Alone	Total in each wage group
	Family	Relatives	Friends		
$4 and under $5	3	..	..	1	4
5 and under 6	22	1	2	5	30
6 and under 7	66	2	2	3	73
7 and under 8	71	3	7	5	86
8 and under 9	56	6	9	4	75
9 and under 10	36	2	7	1	46
10 and under 12	39	3	3	4	49
12 and under 15	24	..	..	2	26
15 and under 20	6	1	..	1	8
20 and over..............	1	..	..	..	1
Total................	324	18	30	26	398*

*Exclusive of 41 women who did not report on this point.

TABLE 8.

Previous Occupations of Women Employed in Laundries, by Wage Groups.

Weekly Wage	PREVIOUS OCCUPATIONS					No previous occupation	Total in each wage group
	Factory Work	Work in Mercantile establishment	Domestic service	Work in Mercantile establishment. Factory and domestic service	Clerical and misc.		
$4 and under $5..	2	..	..	..	..	2	4
5 and under 6..	8	..	10	6	1	4	29
6 and under 7..	13	1	34	10	..	14	72
7 and under 8..	32	4	23	4	..	22	85
8 and under 9..	22	7	14	4	..	28	75
9 and under 10..	11	3	10	1	..	19	44
10 and under 12..	8	3	7	1	3	9	31
12 and under 15..	6	5	..	4	..	11	26
15 and under 20..	..	..	1	1	..	3	5
20 and over	..	..	..	..	..	1	1
Total.........	102	23	99	31	4	113	372*

*Exclusive of 67 women who did not report on this point.

APPENDIX IV.

TABLES COMPILED BY BOARD OF HEALTH.

Disease or Defect	All Laundry Workers		Markers and Sorters		Wash Room		Starchers	Collar Ironers	Body Ironers	Other Machine Operators	Folders	Shakers	Flat Ironers	Hand Ironers
	Male	F'male	Male	F'male	Male	F'male	F'male	F'male	F'male	F'male	F'male	F'male	F'male	F'male
Total Laundry Workers Exam	62	140	17	20	45	..	13	16	19	31	2	10	28	1
No. of Laundry Workers presenting no diseases or defects	2	..	1	..	1	..	..	..	..	..	..	..	..	..
No. of Laundry Workers with diseases and defects	60	140	16	20	44	..	13	16	19	31	2	10	28	1
All diseases and defects	307	951	101	151	206	..	59	95	124	235	9	69	204	5
General Diseases														
Tuberculosis of the lungs—total	6	10	..	..	..	..	..	..	..	..	..	..	..	..
Active cases	6	3	3	..	3	..	..	..	..	1	..	..	2	..
Arrested cases	..	7	..	2	..	..	..	..	1	2	..	..	2	..
Suspected cases	3	1	..	1	3	..	..	..	..	..	..	..	..	..
Tuberculosis of other organs	3	1	1 Gl. 1 Hip	..	1 Perirectal Abscess	..	..	..	..	..	..	..	1 Hip	..
Syphilis	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Active cases	..	1	..	..	..	..	..	..	..	..	..	..	1 tertiary	..
Suspected cases	..	2	..	..	..	..	..	..	..	..	..	2	..	..
Anaemia at or below 70 (Tallquist Scale)	6	34	3	6	3	..	3	6	3	4	1	5	6	..
Alcoholism	5	1	2	..	3	..	..	..	..	..	..	..	1	..
Diabetes	..	1	..	..	..	..	..	1	..	..	..	..	..	..
Diseases of the Nervous System and Organs of Special Sense—														
Diseases of the Eyes (chiefly conjunctivitis)	9	19	3	5	6	..	..	2	3	7	..	..	2	..
Ametropia	24	68	11	13	13	..	1	7	6	2	1	4	14	..
Abnormalities of Nervuos System	6	31	2	2	4	..	4	3	6	3	..	4	8	1
Diseases of the Circulatory System—														
Valvular Disease	..	8	..	2	..	..	..	..	..	1	..	1	4	..
Myocardial Disease	6	2	1	..	5	..	1	..	..	..	..	1	..	..
Diseases of the Arteries	6	58	1	11	5	..	3	4	8	15	..	3	14	..
Varicose Veins	6	46	3	5	3	..	7	6	6	7	1	6	7	1
Tachycardia	7	14	1	3	6	..	2	3	..	1	..	2	3	..
Bradycardia	9	6	3	..	6	..	..	..	..	2	1	..	3	..
Other diseases of the circulatory system	1	4	1	1	5	..	2	..	..	..	..	..	2VM	..

Disease or Defect	All Laundry Workers		Markers and Sorters		Wash Room		Starch-ers	Collar Ironers	Body Ironers	Other Mach-ine Opera-tors	Fold-ers	Shak-ers	Flat Ironers	Hand Ironers
	Male	F'male	Male	F'male	Male	F'male	F'male	F'male	F'male	F'male	F'male	F'male	F'male	F'male
Diseases of the Respiratory System—														
Deviated Septum	13	42	5	7	8	..	..	3	7	11	..	2	11	1
Colds, Rhinitis, and other Diseases of the Nasal Fossae	16	27	3	6	13	..	..	5	4	7	..	..	4	1
Acute Bronchitis	3	2	2	1	1	..	..	..	..	1	..	..	..	..
Chronic Bronchitis	2	..	..	..	2	..	..	..	..	..	..	..	..	..
Pleurisy	1	..	..	..	1	..	..	..	..	..	..	..	..	..
Other Diseases of the Respiratory System	1	..	..	..	1	..	..	..	..	..	..	..	..	..
Diseases of the Digestive System—														
Pyorrhea Alveolaris	20	63	5	6	15	..	4	6	14	17	..	6	10	..
Dental Caries and other diseases of Mouth	34	89	11	13	23	..	8	9	12	21	1	6	20	..
Hypertrophy of Tonsils	3	17	2	4	1	..	..	2	4	4	..	..	3	..
Tonsilitis	..	1	..	..	..	..	..	1	..	..	..	..	..	..
Pharyngitis	31	39	8	10	23	..	..	2	7	10	..	1	9	..
Hernia	3	2	1	..	2	..	..	..	..	..	..	..	2	..
Constipation	9	29	3	4	6	..	4	5	1	5	2	4	4	..
Other Diseases of the Digestive System	1	8	1	..	..	..	..	1	4	..	..	2	1	..
Non-Venereal Diseases of the Genito Urinary System—														
Bright's Disease and other Diseases of the Kidneys	3	9	2	1	1	..	..	..	1	1	..	2	4	..
Menorrhagia, Dysmenorrhoea	..	66	..	10	..	..	4	10	6	19	2	4	11	..
Acne and other diseases of the Skin	11	58	6	9	5	..	5	5	5	18	1	4	12	1
Diseases of the Bones and of the other Organs of Locomotion—														
Flat-foot	16	67	5	11	11	..	2	6	9	17	..	4	18	..
Other Orthopaedic Defects	8	40	3	6	5	..	4	1	3	17	..	2	7	..
Addendum—														
Hypotension (below 108 systolic B.P. for girls and below 115 systolic for men)	15	49	2	9	13	..	2	3	11	14	1	..	9	..
Hypertension, above 150	2	2	..	..	2	..	..	..	..	..	..	..	1	..
Thyroid Glands Enlarged	..	9	..	2	..	..	..	2	2	1	..	1	1	..
Other Glands Enlarged	16	25	5	1	11	..	3	2	3	7	..	2	7	..

APPENDIX V.

RESOLUTIONS GOVERNING THE CONDUCT OF LAUNDRIES. ADOPTED BY N. Y. DEPARTMENT OF HEALTH.

Alfred E. Shipley, M. D., Secretary.

At a meeting of the Board of Health of the Department of Health, held December 19, 1917, the following resolution was adopted:

RESOLVED, That the Regulations Governing the Conduct of Laundries be generally revised and amended, and made to read as follows:

Regulation 1.—FLOORS.—The floors of wash rooms shall be constructed of a smooth watertight material and graded and drained to properly trapped, sewer or cesspool connected drains. If drainage is discharged into a cesspool, said cesspool must be of watertight construction, except otherwise permitted by the Department of Health. The floors of all rooms used for washing, sorting, or handling goods shall be maintained in a clean, sanitary condition and in good repair.

Regulation 2.—LIGHT.—All rooms or places used for handling, sorting, or washing clothes shall be properly and adequately lighted by natural means. Where the natural light provided is insufficient, artificial illuminants shall be installed, arranged, and used to properly and adequately light such rooms during occupancy. The lighting facilities provided shall be so arranged as to prevent unnecessary strain on the vision or glare in the eyes of the workers.

Regulation 3.—VENTILATION.—Facilities for providing proper and sufficient natural or mechanical means of ventilation, or both, shall be provided in each workroom. Every such workroom shall be maintained at a proper degree of temperature and humidity, and shall be properly ventilated during occupancy. If necessary, suction devices shall be installed in workrooms in order to reduce excessive heat and remove excessive humidity.

Regulation 4.—WATER-CLOSET ACCOMMODATIONS.—Suitable and conveniently located water-closets, in compartments ventilated to the external air, shall be provided.

Regulation 5.—SAFETY DEVICES.—All machinery, including belting, shafting, and other parts thereof, shall be properly guarded and provided with suitable safety appliances or devices for the protection of all persons in or on the premises. The machinery and safety devices shall be maintained in good condition and repair.

Regulation 6.—CLOTHES TO BE TREATED BY HEAT.—All clothes shall be washed in water of a temperature of at least 200° F. Provided, however, that this regulation shall not apply to clothes which are subjected, on the premises where washed, to a temperature of at least 200° F. in the process of drying or ironing.

Regulation 7.—CONTAINERS NOT TO BE OPENED IN TRANSIT.—All unwashed clothes received by representatives of the laundry for delivery to the laundry premises for washing shall be packed in containers furnished for such purpose. Such containers shall not be opened, nor shall the unwashed clothes be removed therefrom until the same is delivered to the laundry.

Regulation 8.—UNWASHED CLOTHES AND WASHED CLOTHES TO BE KEPT SEPARATE AND APART.—Unwashed clothes shall not be received, sorted, marked, or handled at the laundry in close proximity to washed clothes. Where the same wagon is used for receiving unwashed clothes for delivery to the laundry and delivering washed clothes to customers, it shall be cleaned after being used for the storage of the unwashed clothes. Where unwashed and washed clothes are stored in the same wagon at the same time, they shall be kept separate and apart and that portion of the wagon used for the storage of the unwashed clothes shall be cleaned after each use.

Regulation 9.—EATING OR COOKING FORBIDDEN IN LAUNDRY ROOMS.—Eating in rooms where unwashed clothes are handled, sorted, marked, or washed, and cooking in rooms where miscellaneous laundry work is handled, are forbidden. Where meals are eaten on the premises, a separate room shall be provided therefor.

Regulation 10.—DRINKING WATER.—An adequate supply of drinking water, furnished by means of sanitary drinking fountains or the use of individual cups, shall be provided for the employees.

Regulation 11.—WASHING FACILITIES.—Suitable wash basins, with sufficient running hot water, soap, and individual towels, shall be provided for employees.

Regulation 12.—LOCKERS.—A sufficient number of suitable lockers in which employees may place their outdoor garments during the time they are at work shall be provided.

Regulation 13.—SANITARY CONDITIONS.—The premises shall be kept in a clean and sanitary condition, and the business conducted in such manner as not to create a nuisance or conditions prejudicial to life or health.

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